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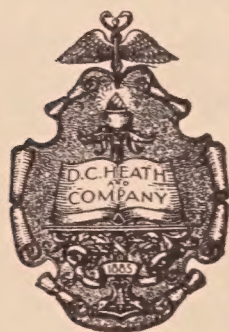


# ECONOMICS OF CLOTHING AND TEXTILES

THE SCIENCE OF THE CLOTHING  
AND TEXTILE BUSINESS

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NEW YORK CITY



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## PREFACE

The *Economics of Clothing and Textiles* was written to give students, workers, and leaders of a great and important industry a working knowledge of the principles underlying the clothing and textile business. Since every one is a consumer of clothing and textiles, the book may be used, I trust, as a valuable part of a liberal education in the social sciences.

Economics may be taught from three distinct points of view; *i.e.*, from the point of view of (a) those interested in drawing conclusions from simple and artificial premises by the application of logical and mathematical methods, whose work in the main has little if any relation to the actual and pressing problems of today and is nearly pure theory; (b) those concerned with the problems of forecasting future trends in business or finance, chiefly on the basis of statistical data; (c) those — constituting the majority — who are concerned principally with the study and analysis of the particular business problems of a single industry or group of industries, such as the manufacture and marketing of clothing and textiles, etc., and which have brought about a rapid advance in the degree of understanding of the mechanics of the business of the particular industry. This book, *Economics of Clothing and Textiles*, presents this last point of view in particular.

Experience proves that though the average student completes the traditional high school or college course of economics in an abstract manner, he is unable to recognize the principles in the everyday work of the clothing and textile business world and also lacks the power of application.

This fact is not surprising. Observation shows that many are able to grasp a principle in the abstract but are not able readily to apply this principle in practice. Therefore, the study of the application of the principles of economics underlying the modern business of the clothing and textile trades is worthy of being treated as a special subject in a high school, college, or special school.

Such a course as provided in this volume aims to give not only vocational training in economics but, as a by-product, a general education in the subject of economics.

The author wishes to express his thanks to the following publications and firms who have furnished information, tables, and other valuable material: *Journal of Commerce* (quotations and information on rayon, linen, etc.), Fairchild Publications (index numbers, etc.), Cotton Institute, Cannon Mills, John Wanamaker, Bergdorf Goodman, John L. Lawrence Company, I. J. Fox, U. S. Shoe Machinery Company, R. H. Macy and Company, Cheney Brothers, American Woolen Company, Silk Association of America, U. S. Government publications, Cotton Exchange, Silk Exchange, Fitchburg Yarn Company, American Bemberg Corporation, Hickey-Freeman Company, DuPont Rayon Company.

Acknowledgment of indebtedness is also made to the following teachers who have kindly read the manuscript in part and offered valuable suggestions: James Shea, Joseph Kane, Arthur A. Wacker, Margaret Sisk, Margaret Mulqueen, Jack Efron, Albert McLaughlin, Muriel Williams, of Southern Teachers' College, Denton, Texas; and particularly to Alice Rathbun, chairman of the Social Science Department of the Textile High School, New York City, whose suggestions were many and very valuable.

The author will be glad to receive any constructive criticism.

W. H. D.

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# ECONOMICS OF CLOTHING AND TEXTILES

## CHAPTER I

### FUNDAMENTAL PRINCIPLES

**Clothing and Textiles.** *Clothing* refers to the various articles used to cover the body. Most of them are composed of cloth, which is made by twisting into threads short thin lengths called *fibers*, and then interlacing or pressing the threads into a fabric. *Textiles* refers to the raw as well as to the finished materials made from the fibers. Textiles are used for more purposes than clothing—house furnishings, as well as various other uses. Since the principal use of textiles is for clothing, we shall use the word clothing frequently in the text to include all the uses of textiles as well as clothing.

**Importance of Clothing.** The subject of clothing is one of the most important that confronts us all. Between 10 and 25 per cent of our incomes is devoted to the purchase of articles of wearing apparel. In addition, millions of persons are employed in the industries that produce the various parts of clothing. The volume of business involved is probably greater than that of any other industry, running into billions of dollars annually. No other subject, not even that of home furnishings, is so intimately associated with our lives and contributes so much to our happiness. No other single element offers such unlimited opportunities to make us happier, more efficient, and more pleasing to our friends as the development of the art of dress. Therefore every problem connected with the making, buying and selling, and consumption of wearing apparel interests us and is worthy of study. Clothing as a whole or the combination of various articles of wearing apparel is sometimes referred to as the costume, and includes the head dress,

jewelry, and other personal adornments as well as the outer and under garments.

The expression "economics of clothing" means the principles and methods underlying the successful management of the (a) making, (b) buying and selling, and (c) the use or consumption of wearing apparel to the best advantage of the state or community, the family, and the individual. The economics of clothing is based on the best experience and efforts of the human race in securing the raw material, preparing the finished product, and supplying the services to satisfy our wants and needs in these respects.

*The economics of clothing and textiles may well be considered the science of the clothing and textile business.*

**Aim of Economics.** Before considering the problems relating to the economics of clothing it is necessary to explain briefly some of the fundamental terms and principles of economics in general, as they might be applied to any of the major industries. Some understanding of these general principles is essential to an understanding of the special problems dealing with the manufacture, buying, selling, and use of wearing apparel.

The experiences of people in the past in producing, marketing, and consuming a commodity, such as textiles and clothing, have been gradually collected and classified. From these experiences have been evolved certain facts and theories that have been summarized into laws and principles of economics. These laws and principles represent the conclusions of people as to the causes and effects of their experiences. Since human beings do not always react in the same way, the experiences of individuals may vary, thus giving rise to certain variations in the conclusions that may be drawn from experience. For example, a dry goods merchant may lower the price of sheetings, naturally expecting the demand to increase. The demand may increase with some classes of people, but other classes may feel that the quality is poorer and will refuse to purchase at the lowered price. For this reason, some stores have found it desirable to keep up the price in order to convey to the minds of the customers that the quality is as good as ever. It is true generally, however, that consumers will buy more of a commodity when the price is lowered. Hence the principles or laws of the economics of clothing express the tendencies of the

*majority* of persons to react to certain conditions, or the *tendency* of a certain economic cause to give a certain economic reaction.

**Application of Economic Principles.** We must bear in mind that in the economics of clothing we are not dealing with inanimate things, as in the case of physics, but with human beings subject in varying degrees to fear, over-confidence, love of distinction, thrift, and other human traits that change from time to time. Therefore when we make a statement about the economics of clothing, etc., the statement means only that certain given economic causes will in normal times produce with most people certain economic results unless subject to special psychological or sociological influences or changes.

To illustrate: Under normal conditions the lowering of prices would increase sales provided the consumer has the necessary purchasing power. But at the beginning of the depression of 1930, wealthy people, although possessing the purchasing power, began to buy less despite the drop in prices.

Because of these psychological and emotional reactions that enter into economic behavior, we see that the economics of clothing is not an exact science in which the principles remain constant, but a social science in which intangible elements must be taken into consideration.

**Terms.** There are certain accepted economic terms used to explain the processes and elements in business and industry that will necessarily recur in our discussion of the textile and clothing trades. The following list includes the more common of these terms: production, exchange of commodities, transportation, taxes, money, banking, consumption, prices, wealth, values, utility, depression, prosperity, wages, interest, income, property, rent, profits, etc.

In the discussions relating to the economics of clothing we shall find that many of these terms have two distinct meanings, one a popular meaning common in ordinary conversation, and another strictly technical or economic meaning. It is well, therefore, to know both meanings and to be careful to use the technical meaning in discussing economic problems. For example, in a general sense the term *production* refers to the raising of a crop or the development or manufacture of a product — that is, the

bringing of it into form or shape for useful purposes. The raising of cotton or the producing of clothing is, of course, production in this sense. In a strict economic sense, production refers to any process or change which renders a product more useful or in any way helps to satisfy a human want or need. Thus not only the raising of silk or the making of a costume may be considered production, but also any service (such as transportation) in connection with supplying an article to satisfy a human want. Production of wearing apparel is, in this economic use of the term, seen to be very complex, requiring the services of many factors and agents, all coöperating and working together, and each making a special contribution to the finished commodity.

**Utility.** *Utility* is a term used in everyday life to describe a quality or state of being useful or serviceable and desired by man. An overcoat is serviceable in protecting the body from cold; therefore it has utility. Our wants or needs for wearing apparel may be divided into two classes: (1) primary or existence wants, *i.e.*, clothing to cover the body for protection against the elements, and (2) secondary or cultural wants, *i.e.*, wearing apparel that is artistic and that appeals to our friends. It follows naturally that clothing designed to satisfy these various desires will possess utility of various types. For example, a lace collar has decorative utility in contrast to the protective utility of the overcoat mentioned above.

Each piece of wearing apparel is made for the consumer and has its greatest utility when it is in the hands of the person who wants it. From the time the raw material, as cotton, is taken from the plant until it is completely finished as a garment and is in the hands of the consumer, it increases in utility. To illustrate: Raw cotton is secured from the farmer who raised it, and it is useful because it possesses *elementary utility* — the property which enables it to be carded, spun, and woven into a percale fabric. It has *form utility* when it leaves the finishing plant where it has been bleached and finished. When the cotton percale reaches the dry goods counter ready to be sold to the consumer it has *place utility*. People purchase cotton percale in spring and summer, and this is the period when it has *time utility*. Cotton percale may be purchased by the case, package, or yard, depending upon the buyer

and his needs. A wholesaler buys a case, a small retailer a package. Each of these has *quantitative utility* when the buyer can purchase what he needs. The cotton percale in the hands of the middleman has *possession utility*, and each middleman adds to this utility.

**Law of Diminishing Utility.** Experience shows that we receive our greatest satisfaction the first time we secure or wear an article of clothing — such as a fur coat. We do not secure as much enjoyment from the purchase of a second fur coat. In other words, we secure less and less satisfaction out of the continued use or gratification of wearing apparel or any other want. This decrease of intensity of any utility with continued consumption is called the *law of diminishing utility* and is very important in explaining many of the problems of the economics of wearing apparel.

**Wealth.** In the ordinary sense we speak of a man having wealth when he has a large amount of money or real estate. But, strictly speaking, in economics the term *wealth* means a collection of goods and services. While money can command the use of more goods and services, it is itself only a symbol of wealth. An increase in money does not necessarily mean an increase in economic wealth unless it means the power to increase the supply of goods and services. After the World War some countries increased their supply of money, but the increase did not mean a proportionate increase in the goods and services that these countries could command, because the purchasing power of the money had decreased. Economic wealth consists of material things that have usefulness (utility) and also services that contribute usefulness. Wool can be raised, bought and sold, and used to satisfy the desires of man. Therefore the raising of wool and the making of the wool into a suit means the creating of more wealth. In the same way clothing is wealth because it has a distinct economic value in contributing to good health by protecting the body from injury and keeping it warm.

**Commodities and Services.** Commodities are services that satisfy human wants and that are subject to purchase and sale, such as wool, silk, clothing, jewelry, and dyeing service. These are spoken of as economic goods, and the total of such economic goods is known as wealth.

Our desire for clothing or wearing apparel may be of two kinds: (1) Commodities — cotton broadcloth shirt, worsted suiting, silk costume, hosiery, jewelry, shoes, etc., all of which are concrete objects, and (2) services — laundering, dry cleaning, and the processes in finishing the cloth, such as shrinking, pressing, printing, and dyeing. While some economists consider only commodities as wealth, others include services as well. In considering the subject of wearing apparel we shall consider both commodities and services under the term *wealth*, since the services increase the usefulness or utility of the commodities. For example, cotton gray goods (that is, unbleached cotton cloth) may be sent by the mill to a finishing plant to be bleached and printed with fine colors in a design. While the unbleached cotton has usefulness as a sheeting, it has greater usefulness as a printed cotton fabric and satisfies an entirely different want.

Human desires, especially in regard to clothing, are practically unlimited. Thus while a person may have any one want satisfied, the sum total of his desires is practically unlimited. Most of the raw materials used in wearing apparel, such as cotton, wool, silk, leather, etc., come directly or indirectly from mother earth. Hence Nature is a storehouse of great wealth, much of it undeveloped. The industries which produce or gather these raw materials — such as cotton growing, sheep raising, silk cultivation, etc. — are called extractive industries. Study of the economics of clothing shows how these natural resources can be developed by study and research and experimentation, so that man may satisfy his desires to the fullest extent without waste and without exhausting the supply. The development of rayon (from linters or cotton waste) is an example of such experimentation. With the increase of leisure and higher appreciation of artistic wearing apparel, it is possible by means of proper advertising and education to increase the wants of mankind by suggesting new desires and new uses for commodities, and thus contribute to the wealth of mankind.

With this increase in wealth we raise the standard of living — that is, we increase the number of wants and desires that a person is accustomed to have satisfied. In other words, we increase the amount of necessities, comforts, and luxuries to which he is accustomed. Necessities are those commodities and services that are

essential to a simple, decent, and healthful existence. Luxuries are those things which satisfy wants that are not necessary for a simple and decent standard of living.

**Income.** Income refers in the popular sense to the amount of money coming to a person or corporation at a specified time or during a specified period. In the economic sense it refers to the total advantages enjoyed by a person or community during a given time or during the use of a commodity or good. For instance, the amount of wear one receives from a suit of clothes is called the income or satisfaction from that garment. But while a \$100 suit may wear no longer than a \$20 suit, we receive a greater satisfaction from wearing it. Hence the income received is greater. Such satisfaction (mental) is sometimes called psychic income as distinguished from the tangible income received from the satisfaction of a material need such as warmth. Income represents one of the most important topics in the subject of the economics of wearing apparel.

**Prosperity and Depression.** Prosperity in the ordinary sense means success as far as wealth or earning power is concerned. In an economic sense it means the creation of wealth and the happiness of the people. In other words, it means the satisfaction of a greater number of their wants and needs. Depression means the opposite, a lowering or decrease in the creation of wealth, accompanied by unemployment and unhappiness. Fewer of the needs and wants are satisfied, and we have what is known as "hard times." Hence in times of prosperity we satisfy our wants of wearing apparel more liberally than we do in times of depression.

**Production and Consumption.** As was explained in the beginning of this chapter, production is a term used in a popular sense to mean "to manufacture," but in a strict economic sense it means the creation of utilities in order to satisfy human wants. To illustrate: Wool is taken from the sheep's back, washed, carded, combed, spun, woven, and finished, and made into a suiting. Nothing has been created, but the wool has been reworked and reshaped into a suit.

A producer is one who creates, or who performs services, or whose labor tends to the gratification of human wants, such as the need for a woolen overcoat. The one who purchases the over-

coat for his own use is called a consumer, and the process of using this overcoat is called *consumption*. Wool as received by the worsted manufacturer and spun into yarns and woven into cloth is called producer's goods, while a worsted suit, when it reaches the consumer, is called consumer's goods. Articles of clothing or wearing apparel — that is, concrete things — are called commodities or goods, while the performance of a process such as dry cleaning is called a service. Services add to economic wealth by increasing the life of a garment, or by adding some other utility to it.

Consumption in a popular sense refers to the using up or wearing out of an article. In an economic sense it means the destruction of goods in the satisfying of human needs — as destruction of a worsted suit by constant use. In making a worsted suiting we destroy the raw wool; this stage is called *productive consumption*. The destruction of a worsted suit by wear is called *final consumption*. In a strict economic sense any one who uses up an article of exchangeable value in serving his own wants or in producing from it another article of value is a consumer. However, in the first case, in using up the raw wool to make a worsted suiting, the manufacturer is both a producer and a consumer. He has consumed (in an economic sense) the raw wool, but he has at the same time produced a worsted suiting.

**Marketing or Exchange.** Clothing and wearing apparel are made in a factory, and in order that they may reach the consumer who wishes to use them they must be transported to a place or shop, called a market, where they may be exposed and seen by those who may buy them. The process through which these articles pass from the time they are made, transported, exposed, advertised, and purchased by the consumer is called *marketing*.

Under our industrial system of the division of labor, some men will possess an excess of one commodity, such as wearing apparel, while others will have an excess of certain other commodities but a need for wearing apparel. The process of exchanging these excess commodities, of clothing, etc., involves their relative values, their transportation, etc.

Exchange in a popular sense means to give in return for something regarded as an equivalent. To illustrate: A person may

exchange one yard of silk cloth for 40 yards of cotton cloth. In an economic sense, *exchange* means the mutual giving and receiving of equivalents in goods, labor, or money, directly or through the means or medium of several transactions. Since direct trading or bartering of one commodity for another can not be successfully carried on in such a complicated society as exists today, money is generally used as a medium of exchange. That is, a manufacturer of wearing apparel sells his product for money and then buys whatever he needs to consume — such as food, heat, furniture, etc.

The process of exchange has developed the great field of transportation. Sailing and steam ships brought wearing apparel from one country to another and gradually developed traders who specialized in foreign trade. This was the beginning of the importing and exporting of goods. Improved transportation and communication by electricity have made the inhabitants of the world neighbors and have created the need of traders or merchants familiar with commodities produced and used in all parts of the world.

**Principles of Exchange.** Buying and selling today are conducted by a group of buyers and sellers called professional traders. The agents who perform the duties of marketing are called *middlemen*. For example, commodities such as textiles must first be bought from the producer and placed in storage, then by transportation brought in small lots to the various places where the retailers may purchase them. All of these middlemen engaged in transportation, marketing, buying, and selling are increasing the value of the commodities they handle and are therefore productive agencies.

Some of these middlemen represent the producers of a commodity and naturally attempt to secure as high a price as possible for the product. Other traders will represent the consumers, who wish to gratify their desires with the least possible amount of money or effort. Some agreement must be reached between these different forces to determine the sum of money at which an exchange will take place. This sum of money is called the *price*.

In the ordinary sense price refers to the amount of money one pays for an article or service. In a strict economic sense it is the equivalent given or asked for in exchange at different places — as

at the factory, in the market, or in the retail store. Hence we have not one but several prices for each commodity — the factory price, the wholesale price, and the retail price.

Each different commodity has a certain power in exchange. This power is called the *value* of the article. When we speak of value in the ordinary sense we refer to the desirability or worth of one thing as compared with the desirability of something else. Thus we value silk for clothing more than cotton. In a strict economic sense value refers to the rate of worth, estimated in money or commodities, that is set upon goods by men who buy or sell in the market. This rate of worth is called the *market value*. This value expressed in money is the *price*. Different persons may value textiles and wearing apparel differently, or may value them more or less at different periods of time. As a result the market values or prices will correspondingly differ.

The next question to be asked is: Who determines the price at a given time? How much for the chiffon dress? How much for the worsted suit? The sellers who have silk dresses and worsted suits to dispose of will offer these articles in the market to those buyers who wish to secure silk dresses and worsted suits. The balance finally reached between these two groups will decide the market price for the commodities.

**Competition and Rivalry.** Textiles and clothing, like other commodities, are produced by many manufacturers. Hence there is always rivalry among the producers to sell the most and to dispose of their entire product. This rivalry or bidding against each other is called *competition*. Since the buyer or consumer is anxious to secure the lowest price, there is a tendency to lower prices to a minimum, or to a point that will be about equal to the cost of producing the commodities. This price is called the *competitive price*. If a group of sellers have exclusive control of a certain article, such as a special type of collar, and have the exclusive right to manufacture that article, they can set the price without danger of competition. Such a price is called a *monopoly price*. Prices of wearing apparel are generally competitive. If competition is carried to an extreme there is an element of risk to industry. In their attempts to cut prices below their competitors, manufacturers sometimes offer their product for less than the cost of

production. This practice naturally results in losses and in failures in business.

To prevent such bitter competition, business men frequently seek to substitute some kind of monopoly, by trade agreements, consolidations, or other means. The government, on the other hand, seeks by means of regulation to maintain a condition of open competition, which is presumably the basis of economic freedom. The assumption is that this system will bring about a natural balance in prices which will cover the cost of production and give a fair profit to the producer while protecting the consumer against unreasonable monopoly prices.

**Demand and Supply.** When we purchase an article of clothing we create a *demand* for that article. Even if the article of clothing is not worth while, we have created a demand for it. On the other hand, if we simply examine the article and pass it over without a purchase, the sales persons know that we are not interested. If many people did the same thing, the article would soon be removed and orders would be given to purchase no more because of lack of demand. The consumer can, therefore, actually control, if he wishes, the kind of clothing offered for sale. Thus by training consumers to appreciate good quality in articles of clothing they would be in a position to dictate not only the style but the quality of wearing apparel.

The popular idea of a demand is a desire for the article. But in an economic sense, a demand requires not only a desire, but also purchasing power or the ability to pay for it. Supply is generally thought to mean the entire stock of goods, such as silk dresses, within reach of the market. In a strict economic sense it means simply that portion of the entire stock that is offered for sale at a given time at a particular price.

The sellers in a market represent the sources of supply and the buyers represent the demand. We saw above how prices were determined by a balance between the selling and the buying forces. These prices thus represent a balance between the existing supply and the existing demand. The ways in which supply and demand affect prices will be described in detail in the chapter on trading.

**Distribution.** The word "distribution" as used in the popular sense by business men means the physical distribution of com-

modities from the manufacturer to the consumer and includes transportation, handling of the commodities, etc. In a similar sense, the word "distributors" is used to describe the wholesalers, selling agents, retailers, etc. From an economic point of view *distribution* has quite a different meaning, and refers to the division of new wealth among those who have produced it. In other words, it means the distribution of goods and services to the various factors that have contributed to their production. Thus we have land entitled to a return in the form of rent, labor entitled to wages, capital to interest, the business man or entrepreneur to profits, and the state or government to taxes. The contribution of each of these factors and the nature of its share of the social income will be considered separately.

**Land and Rent.** Land in the usual sense means a site on which to build or a piece of ground to cultivate. In the economic sense land includes not only the actual soil but all the fertility, water power, minerals, etc., that accompany it. Because land is an essential part in production — either as a site for a factory, or a field for growing cotton, or perhaps as a source of water or wind power, it is entitled to a certain share of income. The amount of contribution made by land will vary. For instance, the factory, the wholesale business, and the retail business must have sites of land that are adaptable to the particular purpose they are to serve. The factory or mill must be located in a center where supplies, both of raw materials and finished articles, may be easily transported. The land must be in a location where the labor supply is adequate. The buildings must be adapted to the particular manufacturing purpose. The selling office must be placed at a point close to the buying power of the community. Naturally some sites of land are more desirable than others for each of these purposes. The better sites of land thus make a greater contribution to production than the less desirable sites. For this reason they can command a greater return in the form of rent. In the same way certain agricultural lands are more fertile than others and contribute more to production than do less fertile lands. They command naturally a larger rent. Thus a factory or mill building located on a stream where there is a waterfall or a railroad track will command a higher rent than the same building located

in the residential section of a town. A corner-window store commands a higher rent for wearing apparel than one of the same size located upstairs. More people passing the corner window will see the display than will see the same display upstairs.

**Theory of Diminishing Returns.** In the cultivation of a cotton field or any other piece of land the yield of cotton, etc., increases with the addition of fertilizer and care (labor). In the beginning the yield of cotton is proportional to the additional labor and fertilizer, etc. (capital), but after a time a point is reached when the application of additional labor and fertilizer, etc. (capital), does not produce a proportional increase in the yield. This experience suggests a theory called the theory of diminishing returns which applies not only to land but to industry. The theory or law of *diminishing returns* states that in the development of any piece of land or industry there is a point at which the returns upon capital and labor are at the highest or maximum, and that after that point is reached the application of additional labor and capital does not give a proportional increase in the product (in case of land) nor a proportional increase in the value of the product (in the case of industry).

**Rent.** Rent is used in an ordinary sense to refer to the amount of value (expressed in money) one pays to another for the use of property or land, buildings, machinery, tools, etc. Rent may be divided into two kinds: (1) Economic rent is due to the fertility of the soil and the location of land, and (2) commercial rent is that paid for the use of the buildings or land or other improvements. The person who owns the property is called the *lessor*, and the one who secures the use of it is called the *lessee*. The one who owns the property is called the *landlord*, and the one who secures the privilege of using it is called the *tenant*.

**Labor and Wages.** Labor is a term used to cover all human efforts for the gratification of wants or the production of incomes. In the economic sense it is applied directly to those who contribute to increasing our economic goods or who render some personal service in return for compensation. According to strict economic reasoning, *labor* is considered as a commodity, and the price paid for it, or *wages*, must be governed by open competition, that is, by what labor will bring in the open market. But from our social

background it can not be considered as such without certain restrictions. It must be recognized that man has a soul, is a member of society, and that after all society exists for the benefit of its members, and industry exists to supply the needs and wants of the members of society.

The manufacture of clothing involves a tremendous amount of work and detail, and demands high standards of coöperation among the designers, manufacturers, and consumers, as well as high standards of production. The people employed are in a very important and artistic industry. They should work under proper hygienic conditions and receive a compensation that will afford more than a living wage, one which will stimulate them to do their best work, and attract a highly skilled class to the industry. A fair wage means an annual wage sufficient for the worker to live, to bring up a family in an economical manner, and to have a thrift account. The legislatures of many states, like Massachusetts, have appointed commissions with power to recommend a minimum wage for each class of workers in an industry.

The term *wages* is used to mean the amount paid for labor, such as \$8 per day. *Salary* is a form of wages, but consists of a definite amount, such as \$50 per week, which is paid regardless of holidays, etc. The forces and conditions that determine the wages of labor are very important. We know from experience or from observation and reading that the labor problem is one of the most difficult in the whole field of business.

There are many rates of wages depending upon the class or type. The worker of one class is not in competition with the worker of another class. Wages and salaries range from those paid to the most unskilled workers to those of the highest directors of industry. Wages are paid according to an agreed basis, such as either (a) time wages, (b) piece rates, (c) commissions, (d) fees, (e) wages in product, (f) additional compensations — bonuses, etc.

Wages must be considered from two points of view: (1) money wages and (2) real wages. Money wages mean the amount one receives, the number of dollars per week or per year. Real wages mean the purchasing power of the amount in terms of commodities, happiness, and satisfaction. Real wages do not depend upon how much we can earn, but upon how much we can buy with

what we earn. This, in turn, depends on the standard of living that the resources and wealth of the country permit, and on the value of money at the given time.

Many times, particularly during the late war, manufacturers, realizing the unstable value of the dollar, have agreed to increase or decrease wages at stated periods as the purchasing power of the dollar increases or decreases or as the cost of living increases or decreases. Tables might be constructed giving an approximate rather than an absolute price index. The construction of such an index is explained later. The demand for labor depends almost entirely upon the amount of capital seeking employment in a country, as capital is divided into a part for machinery, another part for raw materials, and a third part for wages.

**Capital and Interest.** In the popular sense we speak of capital as money, and interest as the amount of money which the borrower pays to the lender for the use of the money. In a strict economic sense capital and money are very different things. The *capital* of any country means capital goods — the factories, mills, railroads, raw materials, machinery, etc., and not the money in that country. *Money* is the medium of exchange. Money may be considered as capital when used in business for production but not when used for pleasure. The prices of articles mentioned above under the head of capital depend upon the amount of money. If the supply of money in a country is increasing, there is no necessary increase of its capital or production goods. As a matter of fact, an increase in the money supply tends to increase or advance the prices of capital goods. Money produces nothing itself, but it can be converted into things that can be utilized in business or industry.

When a man starts in the clothing or textile business he needs money. This money is used to buy or is the medium of exchange by which he buys tools, raw materials, fixtures, machines to produce clothing or cloth. The textile manufacturer's real capital is not his money, but the tools, machines, and raw materials that he obtains by exchanging his money for them. The tools, machines, etc., are called production goods or capital. *Capital* in an economic sense may be considered as any form of wealth, except land, which is used in creating other wealth.

When we produce more than we need and the excess or surplus is used for additional production, it is called capital. Considering capital from a durability point of view we may divide it into two classes, (a) fixed and (b) circulating. The fixed capital refers to mill buildings, machines, etc. Circulating capital represents goods which are used in a single process, such as cotton cloth, lawn, used in making summer dresses.

Considering capital from the point of view of use, we may divide it into (a) free capital, such as coal, which can be used in more than one type of industry, and (b) specialized capital, which can be used in only one type of production — cotton.

Due to rapid changes in the demands of society, it is not desirable to have too much capital in specialized commodities. For instance, if a manufacturer has too much capital in cotton goods, a change in style may cause such a form of capital to be useless.

Capital is gradually consumed in a period of time, but the product of it should be sufficient to replace it. Business men set aside each year a depreciation or replacement fund for worn-out capital — machines, etc.

Interest is generally thought of as the amount of money paid to the bank for the use of money or the return one receives for invested money. When we consider the distribution of income or new capital, *interest* is the amount that goes to capital for its share in production. Thus if a man borrows money to be used in his business, he pays interest on the capital funds. Every business, even if it has not borrowed, figures a certain return or interest on the capital investment before considering that it has made a profit.

**The Business Man (Entrepreneur) and Profit.** The business man, called in economic language an entrepreneur, who organizes, directs, and assumes responsibility for the management of a business, is a definite factor in production. In return for his efforts he expects a reward in the form of profits. Profit in the ordinary sense refers to the gain or excess of receipts or returns over expenditures or outlay. In a strict economic sense it refers to the return from the employment of capital after the deduction of the amounts paid for raw materials and wages, and the real or estimated amounts for rent, interest, insurance, taxes, etc. The

amount that remains as profit after the deduction of these items belongs to the business man in return for his skill and enterprise in conducting the business. If nothing remains as profit, he receives no return for his effort. Upon the judgment of the business man and his utilization of land, labor, and capital depends the productiveness of the business and the amount of wealth that is to be distributed.

The business man must see that his capital is all used, and that every man in his employ has work to do. If he has excess capital and excess labor, he suffers a loss of productivity and can not compete with others in the open market who have not the excess capital and labor on their hands. For example, in organizing and equipping a cotton mill, he must have the proper number of looms to utilize the yarn from the spinning department, and he must have the proper number of men. Every department is laid out for a certain number of men to give maximum production. If more men or more machines are added, more work will be done, but the production per man per machine will be less.

Machinery in the textile industry has increased the production of wearing apparel and consequently has lowered the prices so that we can enjoy more comfort and luxury in our clothing. Machinery has taken the place of many men in the mill, consequently machinery is in immediate competition with labor, and naturally the business man will try to secure the means of manufacturing that will cost him less. In this country machinery costs less, hence it replaces labor. But on the other hand, in China, Japan, etc., labor is cheaper, therefore it takes the place of machinery.

**Government and Taxes.** Tax in the popular sense means the assessment or compulsory contribution placed upon persons, property, or business for the support of the government. In the economic sense it is the return that the government receives for its contribution to production. By maintaining peace and order, by regulating business relations, by furnishing trade information and statistics, by tariff regulation, patent and trade-mark registration, and similar functions, the government facilitates production and in return receives a portion back in the form of taxes.

**Summary of Distribution.** We have seen in the study of the production of clothing and other wealth that five factors contribute

to its production and share in the distribution of the resulting social income.

1. The land provides the site, raw materials, water power, etc., and receives its share in the form of *rent*.

2. Labor performs the work and receives its share in the form of *wages*.

3. Capital provides materials, buildings, machinery, etc., and receives its share in the form of *interest*.

4. The business man, or entrepreneur, who organizes, plans, and assumes responsibility for the success or fortune of the business, receives his share as *profits*.

5. The state or government protects, regulates, and aids business and receives its share in the form of *taxes*.

The proportions in which these five factors of production shall share in the distribution of the new wealth they have created is one of the most important problems that face society today. Each factor magnifies its own importance and demands that its share be increased. Modifications of the existing basis of distribution may be expected in the future just as they have occurred in the past, but it is impossible to say just what these changes will be.

**Graphs.** The rise and fall of the cost of production of commodities may be illustrated by lines called *graphs*, as follows:

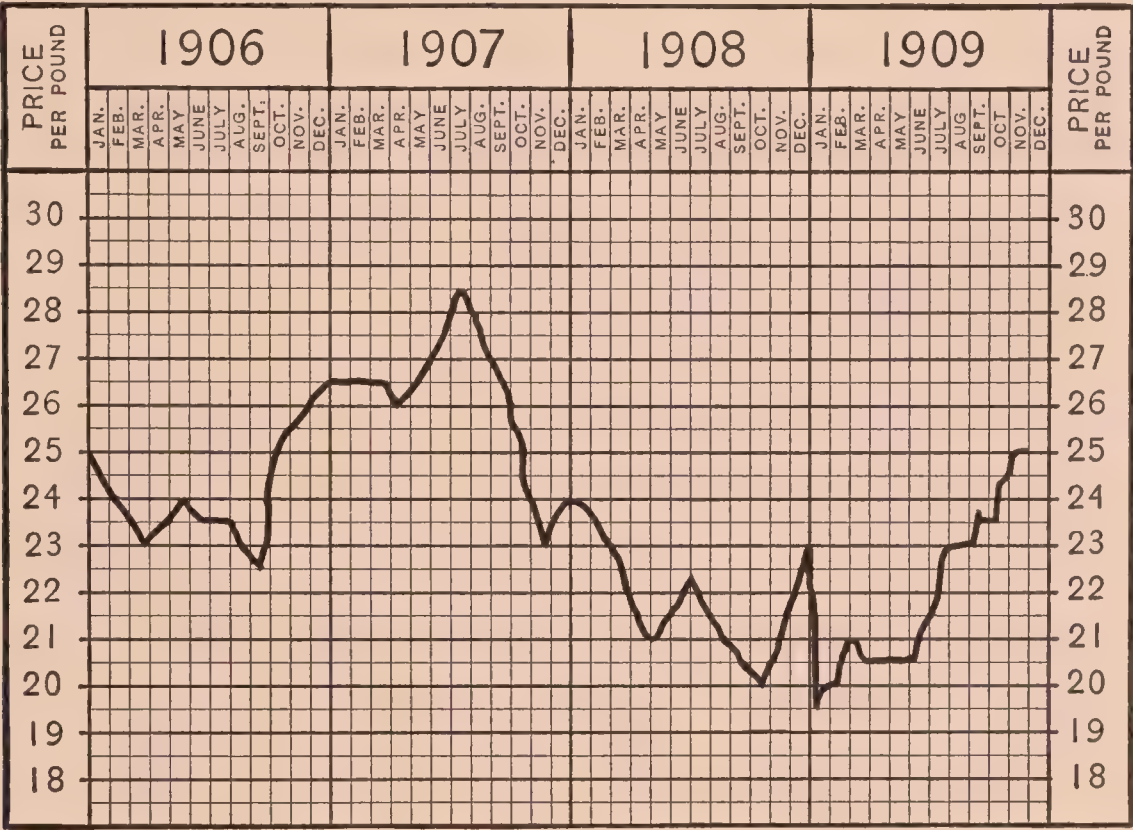
A sheet of paper, ruled with horizontal and vertical lines that are equally distant from each other, is called a sheet of cross-section, or coördinate, paper. Every tenth line is very distinct so that it is easy for one to measure off the horizontal and vertical distances without the aid of a ruler. Ruled or coördinate paper may be used to record the rise and fall of the price of any commodity.

Trade papers and reports frequently make use of coördinate paper to show the results of the changes in the price of commodities. In this way one can see at a glance the changes and condition of a certain commodity, and can compare these with the results of years or months ago. He also can see from the slope of the curve the rate of rise or fall in price.

If similar commodities are plotted on the same sheet, the effect of one on the other can be noted. Often experts are able to proph-

esy with some certainty the price of a commodity for a month in advance. The two quantities which must be employed in this comparison are time and value, or terms corresponding to them.

The lowest left-hand corner of the squared paper is generally used as an initial point, or origin, and is marked O, although any other corner may be used. The horizontal line from this corner,



GRAPH SHOWING THE VARIATION IN PRICE OF COTTON YARN  
FOR A SERIES OF YEARS

taken as a line of reference or axis, is called the *abscissa*. The vertical line from this corner is the other axis, and is called the *ordinate*.

Equal distances on the *abscissa* (horizontal line) represent definite units of time (hours, days, months, years, etc.), while equal distances along the *ordinate* (vertical line) represent certain units of value (cost, degrees of heat, etc.).

By plotting, or placing points which correspond to a certain value on each axis and connecting these points, a line is obtained that shows at every point the relationship of the line to the axis.

**Aim of Business.** Originally each family made all the clothing for its particular needs. The implements were crude, the operators were slow. Only the nobility and the wealthy could secure

the full amount of clothing. The poorer classes did not have sufficient to meet their needs even when clothing was handed down from one generation to another. Later, groups of people became highly trained in the manufacturing and selling of clothing and devoted their whole time to this activity, which became a *business*. Thus we had people engaged full time in manufacturing cloth or costumes; others in buying clothing in large quantities and selling it in smaller quantities, etc. All of these people undertook business to render service to the community in order to “make money,” or *profit*. Some business men, of course, gave better service and thus made more profit than others. Business men are interested in producing goods—*i.e.*, articles or services that have *value*, that is, meet a definite demand.

As we study the subject of economics of clothing we shall find that we are attempting to determine the laws or principles governing its manufacture, exchange or marketing, and consumption. This study will consist of an analysis of the experiences of the past in the manufacture, buying and selling, and uses of clothing. The reasons or statements of tendencies for certain economic results that follow upon certain given economic causes or conditions will all be studied. These laws or principles are very useful to us in assisting us to avoid errors in the development of the clothing and textile trades by predicting the future and avoiding the recurrence of mistakes. In other words, we can profit by the mistakes of the past and determine the future policies in terms of the success of the past.

### QUESTIONS

1. What is the value of the “economics of clothing” to the individual and to the community?
2. Does the lowering of the price of sheeting increase the demand? Explain.
3. Define and give example: production, utility.
4. What is the utility of a dinner jacket to a day laborer; to an opera singer?
5. How do we create wealth by raising wool?
6. What is the problem the study of clothing presents to the individual?

7. What function does dry cleaning play in economics of clothing?
8. How may each of the following be called consumption: (a) Making worsted suiting? (b) Wearing a worsted suit?
9. Define the factors required in creating a piece of worsted suiting.
10. How does the consumer dominate textiles?
11. Explain the meaning of exchange in the medium of textiles.
12. Contrast physical distribution with economic distribution.
13. In a second-hand store, why do men's shoes bring more than women's?
14. If the price of summer dresses ranges from \$15 to \$20, who is the marginal (lowest price) consumer? What would happen if a \$10 dress shop were opened in the neighborhood?
15. How is the price of fall coats determined?
16. What other things besides price must be considered in the cost of a suit?
17. Using cotton percale as an example, explain the different kinds of utility.
18. What are the items that enter into the textile manufacturer's capital?
19. Distinguish between fixed and circulating capital.
20. What must be considered in locating a textile manufacturing site?
21. Why should every girl be familiar with the problems of the economics of clothing?

## CHAPTER II

### PSYCHOLOGICAL BASIS OF CLOTHING

**Psychological Importance of Clothing.** Human desires in regard to wearing apparel are of two general types: (a) The desire for the satisfaction that we receive from wearing clothing that makes us appear to advantage and (b) the desire for warmth and protection against the elements. The first type is mental or psychological in character while the second type is materialistic. The pleasure and satisfaction we receive from clothing and jewels is called psychic income, and is a form of wealth, although it can not be transferred or exchanged. Nevertheless, as we have observed in the previous chapter, this psychic income is one of the most important elements in the economics of clothing.

Our sense of appreciation of beautiful things in wearing apparel and the knowledge of how to use them to best advantage comes to us through education, training, environment, and inheritance, that is, through our background or accumulation of instinct, habits, and emotions. This background governs or influences most of our wants in regard to clothing, and since these wants are expressed through the processes of the mind, it is necessary to understand something of the way the mind functions. The science that treats of the mind is called *psychology*. Hence we should consider the economics of clothing from a psychological point of view.

The working of the mind is very complex and involves many reactions, all of which are more or less closely related to one another. For purposes of explaining the psychological basis of clothing in a general way we may consider the principal functions of the mind as thinking or reasoning, — called in common language acts of the *intellect*, — and feelings or substitutes such as sentiments or moods — called in common language the *emotions*. Another important element is the tendency to act, called in general language, the *will*. Logic is the science of correct thinking, that is, of forming correct inferences, judgments, or conclusions from any set of facts or circumstances.

All these elements are usually found in greater or less degree in each process of mental effort, but it is possible that one may be emphasized or displayed more than the others.

For instance, a jewelry salesman may persuade one to purchase a diamond ring rather than one containing a semi-precious stone by stating that: (a) diamonds never change in value; (b) semi-precious stones change in value; (c) styles change in semi-precious stones but diamonds never go out of style. By this process of analysis, the salesman convinces the customer that it is wiser to purchase a diamond ring than one with a semi-precious stone. This appeal is principally to the intellect or reason. On the other hand, if the salesman emphasized the coloring of the semi-precious stone regardless of the good qualities of the diamond, he might secure the sale on appeal to the emotions, since color is an emotional quality.

Purchases of wearing apparel may be based upon appeal to the reason or intellect, or with emphasis of appeal to passing moods or emotions. A rational person is one who forms his opinions on the basis of knowledge, and who has cultivated his reasoning power. Rational dress is a style that is sensible and can be justified by its logical appropriateness.

Most of our knowledge of wearing apparel, such as the recognition of fine distinctions, the development of experiences in selecting and judging qualities and colors, is gained through the five senses, — sight, smell, hearing, taste, and touch.

**Sight.** Sight is the principal sense, and through it we receive most of our knowledge. It is the sense through which we observe and appreciate the fine artistic points of wearing apparel, and it can be developed to a high degree. The retina is the receptive portion of the eye, and it is extremely sensitive. It is not necessary here to describe in detail the way images are focused and reproduced and transmitted to the brain, but a thorough knowledge of these things has been very useful to designers of clothing. By means of after-images produced in the eye it is possible to create style effects that are really optical illusions. By the proper use of lines, form, color effects, etc., it is possible to make a person appear taller or shorter to an extent of two inches, or to appear twenty pounds heavier or lighter than his actual weight.

Since one of the major values of clothing is its power to satisfy our craving for the beautiful and artistic, it follows that our wearing apparel should be planned to embody the principles underlying beauty of line, form, color, and composition which are observed through sight. The wearing apparel that possesses these qualities in the highest form as applied to each individual is that which yields the greatest satisfaction and thus constitutes the greatest economic wealth.

Since persons differ widely in form, complexion, features, etc., it is necessary to know how to apply to the individual the laws underlying beauty of line, form, and color. As we look at the clothing of a person, we find two distinct outlines, which are often called the lines of the costume. These outlines or "lines," which have much to do with the beauty and attractiveness of a costume, are (1) the outline of the costume itself, called the structural outline or design, and (2) similar outlines or "lines" within the costume formed by the collar, panels, tucks, and trimmings, called decorative design.

**Color.** Color is one of the most important factors in wearing apparel. It causes the chief emotional effect of the clothing and has distinct psychological effects. It has much influence on most people. The following experiments were conducted on nervous and insane patients in an Italian hospital. Special rooms were arranged with red or blue glass in the windows, and also red or blue paint on the walls. A violently insane patient was quieted after remaining in the blue room one hour. Another patient was at peace in his mind after passing a day in the violet room. A very melancholic patient became cheerful after three hours in a red room. Similar effects are produced by proper coloring in wearing apparel. As no surroundings are so inevitable as people's clothes, dress must be held responsible for a certain amount of intended pleasure or annoyance to others. It is said that one's apparel is not without a certain influence on the wearer's own mind. A new color seems to bring a new atmosphere with it, and changes oddly enough the level of thought. Balzac, the French author, says that a woman's character always finds expression in her favorite color. A woman who prefers orange or green gowns is, he thinks, quarrelsome. Those who sport yellow hats

or who go clad in black without cause are not to be trusted. White indicates coquetry. Gentle and thoughtful women prefer pink. Pearl-gray is the color of women who consider themselves unfortunate. Lilac is the shade particularly affected by matronly beauties; therefore, according to this authority, lilac hats are mostly worn by mothers on their daughter's wedding day, and by women more than forty years old.

**Smell.** The organ of the sense of smell is the membrane lining the inner surface of the nose. Odorous particles or fumes emitted from a substance pass over the membrane and stimulate the nerve fibers. Smell resembles taste to a certain degree, in that continuous stimulation will render the sense almost useless. Evidence tends to show that women use their noses as well as their eyes when they go shopping, and that subliminal or subconscious impressions influence purchasers.

A garment, no matter what its quality, generally will sell better if there is something about it to impress the would-be purchaser without his knowing it. This has been tested by faintly scenting three pairs of hosiery of identical texture, size, and color, and asking the consumers to select their choice from them and another identical pair having only the natural, slightly rancid odor of newly-made hose. Half the women chose narcissus-scented hose as the best, while all the rest chose one of the other two scented pairs. No one selected the hose of natural odor. Although the hose used were as identical as machines could make them, the housewives usually gave some apparent physical reason for picking the "best" pair. The most common reasons were texture, finer weave, sheerness, and feel. It was surprising to see them give an apparently profound reason for selecting the one pair when it was the scent which actually made them select it.

Hosiery has been scented by a chemical that will repel mosquitoes. Such hose are desirable to resist these insects.

**Hearing.** The ear is the organ for detecting sound. It is aroused by vibratory movements through the air conducted to the inner ear. The sense of hearing, which is at birth quite inactive and very gradually learns to discriminate sounds, may be trained to detect very slight shades of tone. Experienced mechanics are frequently able to detect weaknesses in textile machinery, looms,

etc., by the noise of the vibration. Imperfections in machine parts are likewise detected by the sound produced from the blow of a hammer. These sound distinctions would not be perceived by the ordinary listener. The rustle of silk and the crackling sound of stiffened linen have distinct reactions upon some persons while not noticed by others.

**Taste.** The organ of taste is the surface of the tongue and palate on which are distributed nerve ends, called taste buds. In order that the sensation of taste may be stimulated, it is necessary to have the substance in a state of solution. The taste sense is not easily aroused, and continuous stimulation rapidly deadens its sensibility. The acuteness of this sense may be cultivated to a great extent by practice. The sense of taste probably influences our choice of clothing less than any other of the five senses.

**Touch.** Next to our sense of sight we find that the sense of touch contributes most to our emotions and knowledge concerning clothing. The nerves of touch extend to every part of the body and receive impressions at their extremities. In the fingers these nerves terminate in a fold that is especially sensitive to vibration. When we touch an object, a flow of nerve energy or sensory impression is sent through the sensory fiber to the cerebrum, forming a sense-perception. It is through the sense of touch that we experience the softness of *crêpe de chine*, the feel of velvet, the warmth of wool, the coolness of cotton, and the absorbing or drying power of linen fabrics.

**Coördination of Senses.** The sense organs are not fully developed in a child at birth. Unlike certain animal's senses, such as the sense of smell in a dog, a child's senses do not reach their full power or precision immediately. The first sense-perceptions need to be perfected by experience. Each sense assists the others, and they eventually give approximate perfection to our sense-perceptions. Knowledge is best obtained by the combined exercise of all the organs of sense. Exercise strengthens the sense organs and makes them accurate.

We know, of course, that we can enlarge the scope of knowledge to be obtained through the sense of sight by means of artificial aids such as the microscope and the telescope. We improve and inten-

sify the powers of hearing by similar aids and by special practice. The surgeon trains his hearing, touch, and sight. In the same manner the expert finisher on cloth trains his sense of touch until he can detect in the texture of fabrics slight differences that are not visible.

Most of our education is obtained by the exercise of our five senses, either separately or in coördination. Thus the eyes and the fingers work together in sewing, in judging the quality of fabrics, in dressing ourselves, etc. These senses are all used in the cultivation of our instincts and innate tendencies, particularly in the tendency to imitation. These tendencies will be explained in more detail later in the chapter.

**Heredity.** In addition, our fine sense of appreciation of clothing is due to our inheritance and environment. To illustrate: All living forms, called organisms, reproduce others which at maturity closely resemble their parents. This process of transmitting likenesses from one generation to another is called *heredity*. As the result of very careful observations, certain theories or laws of heredity have been advanced by scientists to explain the specific resemblance of the offspring to parents and the variations that occur in the numerous offspring. These observations have shown that while this resemblance is close, it is never exact. That is, while the offspring may have certain likenesses, traits, and characteristics of the parents, they may also possess many traits quite different. Then again, organisms closely related may possess so many characteristics in common that the offspring from the mating of two such organisms will not be strong and well-developed.

Biology shows that many human traits, such as good intelligence, low intelligence, a strong physical constitution, and musical, mathematical, or mechanical ability, are transmitted from generation to generation. To illustrate: If a person has been supplied at birth with a poor mental equipment, a definite limit is set to the improvement of which he is capable. That is, he may at twenty years of age have a physical development equal to his years but a mental development equivalent to that of a child of twelve. The same is true with regard to the efficiency of certain mechanical traits. An inherited ability that is of small value at birth will tend to remain of low value during life. However,

heredity is only one of two factors that influence a person's development. Environment frequently modifies hereditary traits and offers one means for overcoming inherited weaknesses or for cultivating inherited abilities.

**Environment.** Environment consists of both the physical and social contacts or surroundings of an organism, that is, the conditions of nature and human life in which the living thing finds itself. These conditions will affect its development in both structural form and in the ways in which the various organs work, *i.e.*, the functional activities of the organism. For illustration: The chief differences between savages and civilized persons are those produced by environment. The inherited traits have been further developed among civilized societies. Civilization may be said to possess the following characteristics: (a) a strong spirit of co-operation, (b) an increase in the amount of knowledge so that a maximum number of human needs are met, (c) a constant effort to improve and readjust conditions so that human needs are met more effectively and more efficiently, (d) an increase in the number of people that may enjoy the fruits of knowledge, and (e) an attempt to eliminate destructive social practices.

**Classes of People.** The late William James — one of the world's greatest psychologists — divided people into two opposing groups. One he called the "tough-minded," and the other "tender-minded." By tough-minded he meant those who push forward, often rather ruthlessly, and accomplish things. Under the tender-minded he grouped all these sensitive and retiring people who are thinking rather than doing. Take an invention, by way of example. The inventor himself — the one who through genius brings something new into being — is usually a rather timid and retiring type of person who is shut up within himself and his ideas, and knows comparatively little about the ways and harshness of the world.

If it were only through the efforts of such a tender-minded person, however, no invention would perhaps ever be marketed and exploited. The people at large would not profit by the invention no matter how useful or revolutionary it might be. So along comes a tough-minded individual, a keen business man who knows all the "ropes" of manufacture and competition. He puts

the invention "across," as the saying goes. Both kinds of minds have their uses. The world could ill afford to do without either.

In using the terms "tender-minded" and "tough-minded" Professor James surely meant no disparagement to either. "Tough," in this sense, merely signifies a certain dynamic force and strength of character so necessary in these modern days if one is not to be "snowed under."

Perhaps better terms for these opposing types are those which the psycho-analytic school of psychology employs. The tender-minded they call the "introverts"; the tough-minded are called the "extroverts."

From our economic point of view it is very desirable to have these two classes of people with their different talents, so that the wearing apparel industry and other trades may have one group inventing new machines, new processes, and new designs, made by the "introverts," while the "extroverts" commercialize their inventions, processes, and designs and make them applicable to meeting our new wants.

**Different Personalities.** Because no two persons have exactly the same heredity and are subjected to exactly the same environment, it follows that no two people in the world are exactly alike. We differ in amount of vitality, weight, color of eyes and hair, and other physical features. While certain instincts and traits are common to human beings the world over, these instincts and traits are not present in equal intensity. To illustrate: I may find William more sympathetic than Edward, Catherine more sociable than Ann. It is the shades of difference in instincts and traits that give us so many personalities. All are different.

**Dress and Personality.** Since dress can bring out the strong artistic points and cover up the weak points of our personalities, it follows that we should dress so as to make the best of ourselves. As no two people have exactly the same personality, it follows that no two people should dress exactly alike in all details. While the same types may wear approximately similar wearing apparel, each one should study her own personality and see if there are not certain details that may be considered distinctly individual to the person.

The clothes that we choose, the manner of putting them on, the care which they have received, all reveal personal traits to those who observe us. Right or wrong, many persons form their opinion of others through the clothes which they wear.

Clothing also has a marked effect on personality. A person who is suitably and becomingly dressed has a self-confidence which the inappropriately dressed woman frequently lacks. Children are often vitally influenced by the clothing which they are forced to wear. Behavior problems are sometimes caused by ill-fitting or poorly constructed garments which hamper the movements of the child, thus causing irritation. A child who is constantly forced to wear soiled and torn garments sometimes becomes a playground problem because he is trying to overcome his feeling of shame and inferiority by annoying and fighting the other children. When his self-respect is restored by clean, well-kept clothing, he becomes a different child.

Clothes have a great influence on where we go and on what we do. Clothes help us to get jobs and to hold them or to lose them. The well-dressed woman selects clothing which is appropriate to her personality as well as to her physique.

**Habit; Skill.** The child's first education or knowledge is received through the senses; that is, the child receives an impression first upon the organ of sense, which is transmitted by the sensory nerve to the brain, where it makes an impression. As a result of a number of these impressions, called *sense-perceptions*, the senses are exercised, and a certain movement of the mind takes place, called a *reaction*, which is transmitted from the brain to the body by the motor cord. Actions that are repeated many times create such an impression on the part of the brain called the spinal column that it puts forth motor actions that become automatic; that is, carried on without connection with the brain itself. This power is called *habit*, or the reflex action of the spinal column, and is shown in walking, etc., which at first requires mental direction, but through repetition is performed unconsciously, through habit. To illustrate: The first time a boy dresses himself he is obliged to make special nervous effort to do the work, and finds great difficulty in dressing. The second time it may be somewhat easier. After a number of trials he is able

to dress. In time he can dress with very little mental effort. This is due to the fact that he has acquired the habit or skill of dressing. Each time he performed this operation it required a certain coördination of the eye and the hand, and finally the response became automatic in its action; a tract (mental) has been produced which can be aroused very easily.

In order to attain skill or technique in sewing, it is necessary to perform exercise stitches many times before we acquire the skill necessary for the coördination of fingers and eyes in making correct movements. The speed is slow at first but increases with practice. Children can be taught needlework more easily than adults because their fingers and joints are pliable, and they can acquire new movements more readily. Some persons have a greater power of coördination in working the eyes and fingers and can acquire a higher grade of skill and achieve a finer degree of precision than others. Through the development of this fine needle skill, beautiful laces, hand work, etc. are made.

**Appreciation.** With the constant acquiring of new impressions and habits we add to our store of knowledge a fund of observation, experience, training, and education. Each new impression is associated with former impressions. Thus our appreciation and needs of clothing apparel come to us from the background of our observations, experience, and training. We are constantly building in our minds a greater number of associations with regard to color, line, style, etc. When we see a new article of wearing apparel, it either pleases or displeases us, according to the nature and wealth of associations and past impressions in our minds. These associations form the background for our opinions of wearing apparel. If our background is composed of high artistic standards, then our judgment or opinion will be good. On the other hand, if our background of impressions is ordinary or poor, then our expression or opinion will be poor.

In order that we may form correct standards it is necessary to observe carefully the wearing apparel of different persons and of different types and to imitate only the best standards of dress. In this way we cultivate excellent taste in selecting all kinds of wearing apparel.

**Association.** All impressions received by the mind are recorded and constitute knowledge. However, it is not always possible to recall impressions. The easiest way to recall them is to arrange our knowledge in a way to facilitate its future use. Memory, or the power to recall past impressions, can be strengthened and trained by arranging ideas in such order that one suggests the other. For instance, they may be arranged in one of the following relationships: (a) known to unknown, (b) concrete to abstract, (c) cause and effect, (d) means and ends, (e) part and whole, (f) like and unlike, (g) object and subject, (h) symbol and reality, (i) dependent ideas, (j) contiguous ideas.

To illustrate: We can understand the growth of raw cotton by beginning with our knowledge of cotton sheeting. We can unravel the sheeting into the thread or yarn and then untwist the yarn into the individual fibers. In this manner one can obtain an idea of the fiber as it exists in the cotton plant. In this case we proceeded from the known to the unknown.

Again, one can understand the principles of dress by considering oneself in relation to the principles that may be applied to others. The application of dress to oneself is concrete, while the principles themselves are abstract.

We know that the overproduction of cotton will cause the price to fall. In this case the *cause* is overproduction, the *effect* is the fall in price.

The means for making cotton sheeting is by raising cotton. The cotton sheeting is the end obtained by this means.

The trousers are a part of the suit. The suit itself is the whole.

These illustrations are simple applications of the above formulas for arranging ideas for purposes of recall at a later time. The same formulas can be used when more complex ideas are to be remembered.

**Attention.** Every exercise of the mind is dependent on *attention*, which is the concentration of nervous energy upon one group of brain cells. The completeness of this concentration determines whether the mental exercise is more or less productive of knowledge and mental growth. For the fullest degree of attention the following conditions are necessary: calmness of mind, healthy organs of sense, nervous vigor, and a healthy body. There are

great differences in individual capacities for attention, just as the power of memory or recollection varies greatly in different individuals and at different periods of life. Some men can easily commit facts to memory but are able to retain them for only a short time, while others require more repetition and effort in memorizing but can preserve the knowledge for a longer period. Some minds have a stronger grasp upon facts, others upon thought and feelings; some have great difficulty in recalling names and dates, but can easily recall an analogy or process of reasoning.

The best minds have not only great power of attention, but also great facility for transition from one subject to another. In minds of universal power the readiness of transition is so perfect as to enable them to attend to several subjects at once, keeping different groups of brain cells at work and accomplishing various kinds of mental operations simultaneously.

The success of advertising and salesmanship depends largely upon the kind and degree of attention elicited.

Ideas are arranged in the mind in series; that is, one idea recalls another. This arrangement is called the "association of ideas." In order to add a new idea to our knowledge it is better to attach it to some idea already present rather than to introduce it as an isolated bit of knowledge. The mind is constantly arranging and rearranging ideas, and this mental process is called reflection or *thinking*.

**Interest.** Another point of contact in both advertising and salesmanship is *interest*. To illustrate: Everything that a person does is actuated by a motive; that is, it is done for a purpose. The impulse, which may be instinct or habit, pushes him forward. Any object or thought that arouses the mind of a person so as to make him inquire about it is said to be interesting to him. This interest may have to be aroused, and it is then said to be acquired. When the interest exists without being aroused by outside effort, it is said to be natural. The average person must have his interest aroused in order to be receptive to an idea or to knowledge. This interest can not be given directly. It is necessary to take a natural interest that is based upon an instinct and to develop it. This process is used extensively in advertising and selling wearing apparel.

**Judgment.** The process of accumulating knowledge consists in obtaining sense-perceptions, retaining them (memory), comparing them, and forming a conclusion called a *judgment*. One might say that every sense-perception has a corresponding judgment. To illustrate: A person examining pieces of cotton, worsted, silk, and rayon fabrics will look at them and note that the cotton is dull, that worsted has depth of color, that the silk has a pearly luster, and the rayon a metallic luster. He will feel of the pieces and note that the cotton is cool, the worsted quite warm, the silk warm, and the rayon cooler. He will gradually build up in his mind associations of the characteristics of the different fabrics. This act of classification rests on sense-perception and memory, but includes the power of holding a property or quality — that is, an abstract idea — before the mind for analysis or comparison. This power is called *abstraction*, or the power of mental conception. In complex operations there is a series of judgments founded on a comparison of qualities and following a natural sequence of cause and effect, or evidence and conclusion.

Judgment becomes more and more complicated as the intellect advances in development. As we grow in experience and education, facts accumulate in the mind and knowledge increases, so that the field for comparison becomes larger, and a greater number of relations and associations enter into our act of judgment. Definite judgments accumulate and form a fund of experience that can be relied upon as a basis for further judgments, and may also become unconscious judgments that are often called *intuitions*. Of course, we must bear in mind that in all complex mental operations there are series of judgments or decisions following a natural sequence of cause and effect. A series of judgments constitutes *reasoning*.

Judgments may be simple or complex. A simple judgment is a direct, immediate conclusion, like an habitual reaction. A complicated judgment is a conclusion arrived at after a process of doubt, deliberation, and comparison of all the facts.

**Advertising Appeal.** In order to secure a response to an advertisement it is necessary to carry out the following steps: (a) to secure the attention of the consumer, (b) to get him to concentrate by holding his attention, (c) to follow up by arousing a desire or suggesting a want or need, and (d) to secure a response.

This last step requires the action of *will*, that is, a voluntary and deliberate choice on the part of the reader of the advertisement. That function of the mind called *will* is the power to control one's movements, feelings, and thoughts by a deliberate choice. It is this power that determines the amount of money or the portion of his buying power that will be expended by an individual. To illustrate: A person may *desire*, that is, have an impulse for a new suit of clothes, but has not the necessary money. There is thus a *wish* for the clothes, but the attainment of them is not possible. If the person does have the necessary money at the time he feels the desire for the suit, he *wills* the desired action and really buys the suit. Of course, before this expression of will there has been more or less thinking and attention given to the suit. The amount of clothing that a person consumes depends upon his income as well as upon his desires and inclination (will). In deciding how to spend our incomes we usually balance or weigh desire against desire to see which will give us the greatest pleasure (psychic income).

The action of the will or inclination to buy wearing apparel or any other commodity is of course governed by associations of ideas in the mind that may develop confidence or fear about the future. The state of the public mind undoubtedly has a very direct influence upon buying activity. Hence during a period of depression even those persons having the necessary purchasing power are not inclined to buy. When people become panic stricken, whether for sufficient or inadequate reasons, they lose their sense of proportion and are no longer willing to take even the ordinary risks incident to all business operations. Under such conditions even an increase in the amount of currency issued does not sustain buying power, nor do unutilized credit resources necessarily result in increased lending and investment activities. Confidence must be revived; otherwise the existence of a potential reservoir of purchasing power will not be converted into an active buying demand for labor, capital, and commodities. Thus from a psychological point of view, demand — for cotton or silk wearing apparel or other commodities or services — is the desire, plus the ability and *willingness* to pay.

**Power of Suggestion.** Our knowledge of wearing apparel, or of any other subject, is obtained by one or all of the following

methods: (a) experience, (b) reasoning, (c) research, and (d) suggestion. To experience is to become acquainted with by means of personal trial, feeling, and other direct contacts. This means that the knowledge is acquired by means of one's senses and judgment, which have already been explained. To illustrate: Examine cotton, wool, silk, or rayon. Reasoning is the method of obtaining knowledge by conclusions derived from facts, as by deductive and inductive reasoning, as in the purchase of a fur coat on a limited income. Research is a method of obtaining knowledge by experiments, as resulted in discovery of rayon. From the results of these experiments judgments are formed, as in the manufacture of rayon. Suggestion is the method of imparting knowledge by a hint, intimation, or insinuation, or any other simple way. That is, to learn by suggestion means that the ideas are readily accepted without investigation. The person accepting the suggestion has faith in the one giving it, and is willing to accept the knowledge by this rather than other methods. Most members of society are not capable of forming judgments on wearing apparel, etc. by complicated reasoning or research. They obtain their knowledge by practical experience and by suggestion. The greater part is obtained from suggestion, a form of imitation of our relatives, companions, or leaders.

Much of the knowledge obtained by children and youth in the elementary and in high schools is by this process of suggestion, presented by the following method: standardized ideas, often called conventionalized, about science, literature, art, history, and morals have been accumulated out of the experiences of the past. This knowledge is the civilization of the people and differs for different races. These standardized ideas are absorbed by the process of suggestion arranged in teachable form. If new concepts are presented that are not in accord with our beliefs or present knowledge, the new ideas are immediately rejected or questioned by the conservative element of the community.

Suggestion means accepting ideas from others. It is the opposite of thinking for oneself. It is a characteristic trait of human nature and is the means by which most of us obtain knowledge. Most of us do very little thinking for ourselves. Through suggestion

we acquire our social heritage and therefore our standards of clothing and dress.

If we depended upon thinking for all our knowledge, we should acquire very little. Hence this power of suggestion is very valuable, and should be cultivated, so that we can obtain from specialists, our superiors, etc., the best knowledge obtainable for the period in which we are living. We can do original thinking in dress and other subjects only after we have acquired a large part of the knowledge that exists on the subject.

**Original Ideas.** We hear much today with regard to original ideas in wearing apparel. We know that the desires and tastes of men and women are in the main the same today as they were years ago. Hence any design of wearing apparel that was once popular will at some time return again in modified form. The science of psychology teaches us that the human mind is incapable of conceiving any idea which is original in itself, and that an analysis of ideas which result from imagination proves that what at first appears to be an original concept is in reality a combination or modification of ideas already existing.

Aside from this principle of psychology, however, it is a well-known fact, which is readily admitted by those engaged in the creation of designs, that all so-called new designs result from combination, coördination, adaptation, and modification of already existing ideas that may be expressed in terms of design. All so-called original design may be shown under analysis, to have been derived from some preëxisting design or combination of designs. This has been true from the earliest days of our handicraft system of production. It is equally true today, when we find design creators delving through museums, libraries, archives, archaeological ruins, books, pamphlets, etc., for old ideas which may be used in their entirety or may be modified and presented to the world as an original. Since this is true, it can readily be seen that the ownership of a so-called original design in wearing apparel would be very difficult to prove.

This question of original designs is very important in the clothing and textile trades. Many manufacturers have spent much money investigating and reviving "new" designs. Competitors often attempt to steal these designs and reproduce them in inferior

fabrics. This practice is called "piracy," and there is a movement among manufacturers to stop it. While piracy should be stopped, it should not be stopped on the grounds of original design, but of research and ownership of the result.

**Instincts.** It has been explained that all human beings are born with certain impulses called innate qualities or instincts. These instincts may vary in different people, but they exist in feeble or more pronounced form in all of us. The principal ones that have influenced the economics of clothing are: (a) acquisition and possession, (b) collecting and hoarding, (c) rivalry, (d) coöperation, (e) habituation, (f) responses of attention to other human beings, (g) gregariousness, (h) attention getting, (i) display, (j) shyness, (k) imitation, (l) cleanliness, (m) curiosity, (n) suggestibility, (o) religious feeling, and (p) love for the beautiful. While psychologists do not agree on the instinctive character of all of these qualities, their presence in human beings is sufficiently general for them to be discussed here as innate qualities.

The instinct of *acquisition* is the desire to have something for one's own, particularly the necessities of life. Every one instinctively wishes to acquire and possess his own clothing.

*Collecting and hoarding* may be illustrated by the desire to collect and save many different kinds of clothing, accessories, etc.

*Rivalry* is the instinctive desire or ambition to excel another — to dress better, to appear to better advantage, or to obtain distinction.

*Coöperation* is the impulse to work with another, or together for a common end. Our business system and our whole existence is built upon coöperation — laborers, capitalists, and manufacturers working together to produce clothing.

*Habituation* is the tendency to become accustomed to a situation — a habit. We are accustomed to the wearing of clothing and to the conventions regulating the use of clothing for modesty.

*Responses to the attention of other human beings* are instinctive and prompt us to see and to be guided by what other people are wearing and what they think of our own apparel.

*Love of distinction* is illustrated in the desire for an exhibition of clothing that shows superiority.

*Attention getting* is a desire to be the center of attention of others. The happy, affectionate nature of woman has always prompted her to gain admiration or love. Clothing has furnished her with many of her devices for attracting attention and gaining distinction.

*Gregariousness* is the instinctive desire to associate with others, to live closely together and not to live a solitary life. History shows that there was a rush from the farms to mill towns and cities even when factory shifts were more than twelve hours long. The gregarious tendency is the foundation of our social system.

*Display* is the instinctive desire to make a great show of oneself — demonstrated in a fashion show or parade.

*Shyness* is the quality of being cautious, *i.e.*, fearful of being the first to appear in a conspicuous costume.

*Imitation* is the instinct to copy or make a likeness of something else. We imitate our leaders in clothing and copy the dress of others we admire.

The instinct for *cleanliness* is evidenced by our desire to appear free from dirt, perspiration, etc. This instinct causes a desire for clean, neat clothing.

*Curiosity* is the instinctive desire to know or to see. We desire to see the latest styles of clothing and to read news of fashions. This instinct causes us to want to see hidden and mysterious things. Common and everyday things do not arouse our interest. Hence jewelry and delicate trimmings are used to call attention to the artistic points of the body.

*Suggestibility* is the tendency to believe readily, to agree without reflection. Sales clerks and stylists easily influence our choice of clothing by means of suggestions.

*Religion* represents an instinctive desire to worship. Out of this instinct follows, through ignorance, fear, and superstition a belief in the existence of demons. To overcome the fears associated with the superstition, color and shapes of clothing were used to exclude them. Red, particularly, was thought to keep away the evil demon. Hence red has always been a prominent color in clothing.

*Love of the beautiful* is a craving for artistic things — colors, lines, and forms as carried out in nature.

In addition, out of the above instincts develop such selfish interests as (1) desire for wealth, and (2) desire for power or position, which have been responsible for our great industrial and business development.

**Acquired Traits.** Characteristics and impulses of people that prompt our desires and needs have been considered as of two kinds: (a) innate and (b) acquired. The innate impulses are those that are born with us and appear at different periods of life — such as the impulse to play. As stated before these are sometimes called instincts. Those characteristics or impulses that we

acquire during life, because of environment, are called acquired traits — sometimes called habits. In other words, the impulses that appear naturally are called instincts, and those we acquire by practice we call habit. Both instincts and habits may be physical or mental. These instincts and habits constitute the characteristics of human society and are called human nature. The quality or characteristics of classes of society depend in a large degree on how well these instincts and habits are developed and trained. The acquired traits or habits are quite as important as the instincts, for a community or society is considered high class if the acquired mental habits and traits are good, and the society is low grade or low class if the acquired traits are bad. In fact, civilization is above savagery because the people called civilized have acquired a great number of mental habits which the savage has not.

Of course instincts have much to do with the formation of habit. Instincts predetermine in a general way the kind or quality of the habit. For instance, the instinct for distinction prompts us to try to dress better than others.

It has been proved by Weissman, the sociologist, that acquired characteristics are not transmitted, which means that the changes that take place in an individual during his lifetime can not be transmitted to his offspring.

**Emotions.** Each instinct or impulse, once aroused, gives a characteristic reaction of the mind, such as an excited feeling, which is called an emotion. For example, the first time a diamond ring was placed on the hand we probably received a distinct emotion of delight. Fear is an emotion aroused by any object or incident that recalls associations or previous experiences of an unpleasant nature. Feeling is the quality by which expression is given to the emotions. Thus feeling actuates the creative work of artists and poets, and should likewise actuate all designers and artists in the conception and execution of designs for textiles, clothing, and wearing apparel.

The feelings associated with emotions may be either simple or complex, and of either a high or low nature. To illustrate: The feelings aroused by religious, moral, intellectual, or aesthetic emotions are usually considered to be admirable and of high character. Complex feelings of this higher type are often called

sentiments, as compared with the ordinary emotions of fear, etc. Sentiment is the life and soul of beautiful or artistic things. It can give an irresistible charm to the crudest image. It is a tender or an artistic attitude that includes a tendency to judge objects by their power to arouse feelings.

The association of ideas is determined more by the condition of our feelings than by any resemblance or connection between the ideas themselves. Consequently our emotions play an important part in our actions and judgments. The emotions determine our association of ideas and accordingly our judgments and actions. Therefore, it is very important that our emotional nature should be carefully trained and should develop wholesomely and freely.

Our mental make-up is such that we seek mental relaxation after the routine and long hours of uninterrupted concentration. In civilization, man has sought relaxation (change of mental clothing) through movies, theater, literature, music, travels, hermitage, and in some cases through dissipation, such as drink, drugs, revelries. These activities appeal more to the emotions than to the reason and thus offer relaxation. Through these media and others man has resolved away his cares and anxieties, as expressed by the wise sage :

A little nonsense now and then  
Is relished by the wisest men.

Out of this instinct of play or spirit of relaxation has come a demand for playgrounds in America and Europe, where people may go at all times of the year and relax. With the spirit of play and relaxation comes a desire for beautiful and suitable clothing to make people appear to advantage and happy.

It is unfortunately true that here in America, largely because of our ideas of success and the premium we put on money making, there is, despite our unequaled facilities for education, altogether too little attention paid by parents and teachers to the development of emotional stability and control. The nervous and emotional side — the effective side — deserves training as well as the intellectual side, and for the good of the race it ought not to be left to chance. Too often it is so left, with unfortunate results. Many an adult fear or worry goes back to neglected training —

fear of the dark, for instance, or fear of closed spaces or open spaces.

Such weaknesses as dislikes, fears, or aversions may be eliminated by proper training and education. Thus a fear may exist because of an incident that recalls unpleasant associations or happenings. By connecting with the incident pleasant and successful associations, fear may be overcome.

There are certain weaknesses of human nature, such as gambling, which are due to an unstable emotional character and, in this case, also the desire to gain money quickly and without much effort. This weakness is carried over into business and accounts for wild speculation and unsound business practices.

The factors of emotions and feelings, such as confidence and fear, enter very largely into failure and success in business.

The physiological condition of a person changes from day to day, and in even a well-balanced individual the emotions are constantly fluctuating. Nearly every one has his "bright" days and his "blue" days. Of course, in the temperamental or nervous type of person these fluctuations are more pronounced, and we see striking alternations of cheerfulness and sadness. In extreme nervous or temperamental types these fluctuations are exaggerated and are often called eccentricities. These types of individuals have great economic importance, for it is from them that our group of leaders in dress designs, artists, musicians, inventors, etc. are recruited. Often during these temperamental outbursts have been conceived the greatest achievements, designs and inventions. Therefore, these types should be carefully trained, encouraged, and given a sympathetic hearing at all times. Many a brilliant achievement has been stifled by an unkind word of the phlegmatic, matter-of-fact individual who lacks an appreciative point of view for the temperamental type of mind. Persons of this type usually reflect their personalities and temperamental streaks in their clothing, *i.e.*, the wearing apparel of an artist or an opera singer.

**Business Cycle.** The part that fashion and emotion play in our economic life can hardly be estimated. When silk is in fashion we long for silk, when cotton is the fashion we long for cotton, at another time wool, etc. Rapid changes in fashion and fads affect business: it is either prosperous or depressed. These

changes of good and bad in business are spoken of as business cycles.

The business cycle has been regarded by many economists as a psychological rather than an economic phenomenon. The pleasure-pain principle has been applied to labor, exchange, consumption, and value. Errors of optimism and of pessimism are caused by waves of emotion which run through society from time to time.

A mistake or error of optimism tends to grow throughout the community and through psychological relations leads to a crisis. Then the mistake or error dies and gives birth to an error of pessimism that grows in psychological importance until it actually causes a shortage. Thus the psychological interpretations of business fluctuations must always supplement the economic interpretations.

**Cultural Development.** We have observed before that human nature is practically the same so far as innate instincts and desires are concerned and that the elements of human nature are fundamentally the same today that they were two thousand years ago. The differences between civilized people and the uncivilized are due to the development of the original instincts by observation, memory, curiosity, imagination, and reason, and to acquired traits, not to new or different instincts which they possess.

If we make an analysis of human life we find that it is primarily a struggle to satisfy human wants — to secure clothing, food, shelter, etc. Thus we find all human beings, including the savage, have acquired a knowledge of the art of making clothing and some of its uses, the ability to use various weapons with which to defend themselves, and to prepare traps to obtain food. They have also developed some form of language.

Some human beings, particularly those living in the north temperate zone, have made greater progress in living than those living in other parts of the world. The differences in climate and physical resources have been the cause of the development of racial differences and also in the pace at which civilization has advanced. With this background of habit and instinct we can interpret the cultural contributions made by different nations at different periods. The minds of the ancient peoples differed from the

medieval and modern minds, because of the difference in their acquired contents.

Since acquired traits are not inherited, children tend to accept the habits and characteristics of their cultural environment. To illustrate: A child born of civilized parents, placed at birth in the African jungle and reared by savages, would to a large degree wear the same clothing, acquire the habits and traits of the savage, and would desire to remain in the jungle when he reached manhood. We observe today in our rural and industrial centers that children react in a similar manner and tend to acquire the physical and mental traits and habits of their parents and the group population in taste and use of wearing apparel with which they come in contact.

Classes in the same community appear differently in clothing and style because they have acquired different habits. The poor may have developed in an environment that tends to produce a feeling of inferiority, carelessness in dress, and no appreciation of fine clothing; they live squalidly and lack an appreciation of the finer or artistic things of life. In contrast to this group, young people that develop in association with wealth and culture and appreciation of fine taste and wearing apparel usually tend to develop an ability to evaluate and appreciate these things.

To satisfy the tastes and demands of all the people, wearing apparel may be divided into at least four style classes, according to the demands of various groups: (a) conservative, (b) popular, (c) ultra-stylish, (d) exclusive. To illustrate: A serge costume is composed of a staple fabric, and is always in style, hence it may be considered conservative and adapted to business or street wear.

It is only after the necessities, such as food, clothing, and shelter, have been acquired, that mankind attempts to satisfy other longings and desires, such as a desire for beautiful things, for music, companionship, and the higher social relations.

Of course this desire for the beautiful may be crude in the beginning, but by training it is possible to develop a very high appreciation and discrimination, as well as a desire to own and create beautiful things. This is particularly true with regard to things we associate closely with ourselves, such as clothing. Nature — our natural surroundings — suggests beautiful colors,

lines, and form combinations that can be utilized. Hence we find people that are located at different geographical points differing in the coloring and form of their clothing because their surroundings in nature are different.

As stated before, our appreciation of the beautiful depends largely on our cultural environment. In order to appreciate the beautiful forms of clothing it is necessary to teach our minds to see the fine distinctions. As is true of everything else in the world, there are two ways of enjoying a work of art (of wearing apparel, etc.): (1) with or (2) without understanding. We have, in every generation, emotionalists who enjoy and judge a costume or a piece of sculpture by the amount of emotion it rouses in them. This approach, as a beginning, is admirable. To be sure, it is haphazard, arbitrary and, according to biologists, unfair. Nevertheless, an emotional approach to art is, because it is often intuitive, an excellent thing.

But there is more in a work of art or in a costume than the emotions alone can comprehend. Every work of art is related to art history. In other words, it is related to and influenced by other works of art. Only as we study and know these relationships and influences can we perceive and enjoy intelligently the individual contribution of this or that artist and what he himself has to say. Only by developing our power to analyze, compare, and form conclusions about wearing apparel can we learn to exercise sound judgment about clothing and its artistic value.

Art in dress demands that the costume be planned so that it will meet certain aesthetic requirements known as the principles of design. In addition the costume must meet the standards for modesty, health, and economy.

**Art of Clothing.** Out of the craving for beauty and the impulse or desire to express ourselves or to create have come the fine arts — architecture, landscape gardening, music, painting, drama, the art of costume and of beautiful clothes, including jewelry, embroidery, and fine needlework. Society encourages the development of the fine as well as the useful arts because they contribute to human happiness and welfare by satisfying other than material needs.

Probably the instinctive desire for decoration and the beautiful finds its greatest outlet in clothing and home furnishings. The

designing and construction of a garment and the choosing and assembling of a costume which is to be worn are each a form of creative expression indulged in by most persons.

Adornment of the body is practiced in three distinct ways: (1) All classes from the primitive tribes to modern society attempt to mold the body to certain local standards of beauty, such as head deformation, foot compression, and waist and bust compression or expansion as practiced at various times. These forms of deformation emphasize some natural physical characteristic of the people who practice them. (2) Another form of adornment is the application of coloring or other substances to the body, such as painting and tattooing. (3) The suspension of attachments to convenient portions of the body represents the commonest method of adornment and includes the ear, nose, and lip ornaments, head dresses, armlets, girdles, wristlets, leglets, anklets, and finger and toe rings.

**Modesty.** The feeling of modesty is not instinctive, but is rather a conventional form that differs with various religious beliefs and races of people. Evidence shows that it is a feeling of acute self-consciousness caused by appearing in unusual clothing, and that the feeling of shame is due to the mental condition caused by the change, abbreviation, or absence of accustomed clothing. To illustrate the varied ideas of modesty: The Mohammedans feel that a woman is immodest if her face is uncovered, regardless of how fully she is clothed otherwise. The Chinese feel that it is indecent for a woman to show her compressed feet. Various wild tribes feel that a woman who is tattooed is decently clothed. In African tribes the men are more elaborately clothed than the women. Explorers report that savages who are accustomed to go with little clothing have a feeling of confusion when they are asked to become fully dressed according to European standards.

**Style of Theatrical Costumes.** The selection of proper clothing for stage and movie is a more serious problem than dressing for an ordinary event or party. The effect of clothing worn on the stage and in the movies must be more psychological than ordinary tailored or costumed apparel. In other words, a costume before the footlights or movies must be something more than a costume: it becomes a tool to be skillfully used by the actress to aid her in

conveying the personality, traits, and moods of the person whom she is portraying before the audience.

The clothes the actress wears make first contact with her audience, and for that reason are important. They can establish her as *chic*, dowdy, rich, poor, sympathetic, gay, or scheming. When you see an actress appear in a red velvet cloak you know that she is in a gay and dangerous mood before she even opens her mouth. When an actress changes from the costume of a lusty cabaret singer in the first act into a dull blue tea gown, you know at once that a change has taken place in her character.

**Religious Influences.** The clothing worn by people at different periods has been determined more or less by social, religious, economic, political, and geographic influences. The instincts of all classes, even the slaves and serfs, have influenced them to appear attractive to their friends. Also, the love of distinction has developed a sense of rivalry which has been the compelling and moving force that causes styles to change. Religion has influenced many forms of clothing and wearing apparel, and has caused, among others, the distinctive garb of sackcloth.

The clothing worn by churchmen in various services is of ancient origin and has symbolic meaning. Most religions discourage interest in dress, and religious leaders frequently use the pulpit as a means of condemning fashions of the day.

Sackcloth is penitential fabric. The ancients, more particularly the Hebrews and Assyrians, during the period of great affliction laid aside the garments best suited to their ease and comfort and put on sackcloth, which was woven of the coarse, short hair of animals, twisted together and used for both warp and weft; this coarse, prickly material was made into garments which fit close like a sack, without trimming or other adornment, and were worn solely to inflict personal discomfort in cases of grief or penance.

The Egyptians believed in the immortality of the soul and they searched for a fabric that would express this belief — linen.

**Emotional Appeal of Cloth.** Since clothing is intended to add to our attractiveness, it is only natural that man should choose the designs of the best in nature — flowers, animals, stones, etc. The environment has modified feelings and tastes in matter of decoration. Thus we find the more brilliant colors near the equator and

the more subdued ones as we approach the north. Tastes and standards in clothing vary as widely as do our social and physical backgrounds. Individual fabrics and styles of clothing are so varied that almost any mood or personality may be emphasized by the proper choice of garments.

European countries stand very strongly for local interests, which cause local styles and also individual styles. The result of this local feeling has been a resentment against mass production, mass designing, and mass styling. Americans, on the other hand, because of mass production and mass designing, have attempted to standardize everything, even style models, as much as possible.

Due to the strong feeling of democracy in America, there has grown up a feeling of democracy or sameness in dress, so as to eliminate social distinction. The fear of being ridiculed and called undemocratic and a "snob" has prevented men from displaying individuality in dress.

**Style Inspiration.** For centuries Paris has been the style center of wearing apparel for women and London the style center for men's clothing. The best known style creators for women's clothes are found in Paris. These persons are truly creative artists. While they must conform somewhat to fashion in order to sell their dresses, one finds artistic touches, lines of design, and distinctive treatments characteristic of each designer. Some really launch a new fashion.

They hold openings or exhibitions of new models to which their patrons, press agents, and certain buyers are invited. Here several hundred models may be displayed, and of these only a few prove successful. These become the fashions of the season.

The keynote of the new style is usually influenced by some passing event, such as the war of the Balkans, the French colonial exhibition, the centenary of George Washington, the nudists' movement, etc.

**Resort Fashions.** There are resorts that wealthy people frequent in winter, spring, summer, and fall to spend their leisure time. It is at these places that one finds the best dressed men and women. Since these resorts are found in different parts of the world, the climate varies from extreme heat to cold at the same season, from Palm Beach, Florida, Hot Springs, Virginia, to the

winter sports at Lake Placid and Canada. The fashions during January in Palm Beach forecast these at Bar Harbor, Maine, in July. So that the fashions appearing at one place forecast those that are to appear later in the year at other resorts with the same climatic conditions and temperature.

Dress manufacturers and designers use the resorts of the different countries as "try-out places" for their model costumes. All the great original designers, called *couturiers*, send their new models to these resorts, where the creations are worn on living models, called manikins. Since these resorts differ in location, temperature, and surroundings, it is necessary to know these differences in order to be able to choose the styles that are appropriate and also to know how to interpret the reactions, so that the costume styles that are popular may be adapted to new locations.

The fashion centers for the display of new creations are found to best advantage in the playgrounds — race tracks, health resorts, beaches, winter sport centers, fall and spring country resorts, etc. These places may be classified according to location into the following groups: (a) European, (b) English, (c) Scotch hunting centers, (d) African hunting centers, (e) American southern winter resorts, (f) American and Canadian northern winter resorts, (g) American western resorts, (h) American golf resorts, (i) American summer resorts. The styles of great designers or *couturiers* like Worth, Lanvin, Paquin, Jenny, Vionnet, Patou, Poiret, etc., appear at all such pleasure resorts.

**Fashion and Wealth.** The nobility first introduced the idea of fashion. The poorer people felt it was sinful to have changes in clothing, and in fact it was not within their power to have such changes. The wealthy people attempted to imitate the nobility, which caused the latter to make a change in the style of their clothing as soon as the wealthy were able to have the prevailing style copied.

At different periods in history, and in different countries, we find different conceptions of the style of dress appropriate to reflect the wealth of the individual. In ancient Greece the work was done by slaves, and the freemen wore flowing costumes that were unsuitable for working conditions. Later, when the men were obliged to toil, the costume changed from flowing to close

fitting. The oriental conception of wealth was expressed in displaying a large amount of jewelry on the wife. The Chinese favored small feet and long finger nails for women because they retarded the ability to work. Such evidences of wealth gave distinct social standing.

There is a strong feeling, particularly among the working classes of women, that the chief pleasure of life is that obtained from wearing apparel. This is shown by the behavior of the working girl, who insists on wearing party dresses to work. This is caused by the desire for the respect of their fellow workers and is also a psychological reaction to the menial feeling incident to working about machinery. The love of distinction exhibited in wearing apparel is really an appeal for the approval of people of one's own standing and of those beneath us, but never of those above.

**Variety in Styles.** The difference in style effects requires the making of many types of fabrics, because not only the color but also the cut and line effects depend upon the characteristics of the fabric. To illustrate: A stiff silk fabric like taffeta gives a bouffant effect while crêpe de chine will give a soft, clinging effect. Chiffon, a light, sheer silk fabric that lacks body and stiffness, may be used as an overslip.

To satisfy human desires, clothing and costumes have been devised for all kinds of uses and occasions: (a) walking, (b) riding, (c) tennis, (d) golf, (e) street, (f) informal, (g) formal, (h) leisure.

Fashion has rapidly developed in all forms of wearing apparel since the advent of modern machinery. Clothing is cheaper today than at any other period. A generation ago clothing was proportionally more expensive, hence changes in fashion were not as common as they are today.

The use of gloves was years ago restricted to the nobility and the well-to-do. Gloves were considered a distinct luxury, the trade was not extensive, the prices were high, and the decorative elaboration caused additional charges and a higher price.

We must remember that clothing has two elements, (a) practical use, and (b) luxury. Frequent changes of fashion emphasize the luxury and not the practical use of clothing.

**Widespread Knowledge of Style.** News concerning changes in style passes quickly from one group to another by various modern

channels of communication — the telephone, the telegraph, the newspapers, the magazines, the radio, television, and the cinema. Today the same fashion is in vogue all over the country, so that people in remote districts are well informed regarding the latest changes in style. This eliminates embarrassment, the feeling of strangeness and inferiority, caused by being dressed differently from others. It tends to bring about a more democratic nation, because if we dress alike we are less apt to have geographical and class distinctions.

**Effects of Emotion.** The spirit of depression is "catching," like an infectious or contagious disease. Morale at all times is almost as much of a problem in a large organization as it is in an army. It is notorious that it is hard to maintain morale in a period of deflation, when men have to be discharged, wages have to be cut, and retrenchments have to be made. Here, for instance, you have a salesman, full of enthusiasm, "going strong." But one day he has a heart-to-heart talk with another salesman whom he has always envied and gets the impression that anything may happen to his job and his pay. He goes home and tells his wife, and she is thrown into anxiety. Worse yet, from that time on he is full of suspicion, and instead of concentrating on his job, spends half his time watching the other fellow and listening to and passing rumors, until finally he is practically useless. The officials are unable to stifle the spread of the depression. In fact it gradually goes through the whole force of officials. During this time both men and women lose interest in their personal appearance and no wearing apparel is purchased. This in turn cripples the whole industry.

A panic usually precedes a depression and is due to psychological reasons when a few people have lost confidence on account of false or true rumors, and the fear element causes one to become selfish enough to withdraw his share of capital, regardless of the interests of society in general.

A state of mind, business executives agree, is the most real thing in this world, except the necessities of life and money with which to buy them. All organizations — families, corporations, even governments — are what men, with their individual state of mind, make them. In other words, no matter what Luck and

Prosperity ordain them to be, all organizations are, for better or worse, the sum total state of mind of the individuals of which they are composed — on the side of morale, at any rate.

Each individual is the hub of his own universe, and the victim, for better or worse, of his own mood — a depression or a boom in himself, more or less. Therefore, though most Americans look upon nationwide depression as a condition remote in cause but not in result, actually, in one sense, it is the state of mind of any typical American multiplied by 120,000,000 or so.

Therefore the emotions should be carefully developed so as to appreciate in the highest degree the different kinds, qualities, and values of wearing apparel. On the other hand our emotions should be controlled so as not to allow them to disturb our happiness, business relations, etc.

**Serious Results of Change.** A sudden style change may cause economic disturbance among established industries. For example, the weight of wearing apparel of both men and women, particularly women, has decreased since medical science has decided that the human body should be exposed as far as possible to the circulation of air and sun rays. The reduction of weight has caused the consumption of wool and cotton to decrease, and naturally affected the running capacity of textile mills.

Then again, changes in the composition of clothing, especially women's, from silk to tweed or furs, and from cotton to silk, etc., have affected the running and production of the mills. Each mill is laid out to make clothes of one composition and often of one weave, and any change means curtailment of the mill.

The cutting of long hair on the part of women affected not only the ribbon industry, but also the ostrich industry that had supplied feathers for ornaments.

The fad of going without hats has stunted the cap industry.

**Age in Clothing.** Just as we have clothing adapted to various occasions, we also have it adapted to the physical and mental characteristics of different ages, from children to old men and women. It is important to know the characteristics of the various age groups.

Life may be divided into the following periods: infancy, from birth to six years; childhood, from six to twelve years; adoles-

cence, from twelve to sixteen; sixteen to eighteen; eighteen to twenty-four; adult; old age. The period of infancy is the time of greatest activity, when the child appears to consist largely of a bundle of instincts, such as locomotion, curiosity, grasping, etc. Therefore the clothing should be loose and free in order not to curb these activities.

At the age of five or six a child is able to walk with ease and grace, but the precision of the movements of hands and fingers is about three-fifths that of a boy of sixteen years of age. The clothing should still be adapted for activity and self-development.



INFANTS' CLOTHING

The second period, childhood, is marked by less violent and more directed self-activity. The most active instinct is the play instinct. It is both expression and means of education. Hence clothing at this period should be adapted for play purposes, and should be strong and washable.

Growth during the period from ten to twelve is slow, and a surplus of energy is available. It is the time when the play instinct is strongest and a period for the development of facility and skill, when drill exercises for the formation of habits may be given with least harm. It is the time when boys like to form groups and organized clubs.

From fourteen to sixteen is known as the "clumsy age," when the bones grow faster than the muscles. Some children during this period develop awkwardness, periodic laziness with a tendency to self-assertion, and dreams of greatness.

At sixteen years of age children begin to take an interest in wearing apparel and attempt to dress to appear to advantage.

From eighteen to twenty they long for the extremes in fashion and seek new clothing in latest designs and colors. Note the wearing apparel of college freshmen. Above twenty they assume a more conservative but nevertheless strong interest in wearing apparel.



SCHOOL DRESSES

As we grow older and approach the marriage state our wants of clothing become very elaborate and numerous — clothing for all occasions — business, club, sports, formal, semi-formal, and all forms of leisure clothing.

As people approach forty they become more conservative in their dress and their wants are fewer. This continues to old age when the desires are limited and very conservative.

### QUESTIONS

1. Why is the psychological basis of clothing important?
2. Explain briefly the workings of the mind in the purchase of wearing apparel.
3. (a) What are the three functions of the mind? (b) Explain in detail the purpose of each function.
4. Define briefly: (a) logic, (b) rational person, (c) immediate organ of the mind, (d) senses.
5. Why are the senses of touch and sight important in the appreciation of wearing apparel?
6. Describe briefly the cause of after-images and their importance in dress.
7. Describe the importance of appreciation of the proper (a) color, (b) line, (c) luster in wearing apparel.

8. State how the appreciation or education of the value of dress may be acquired.
9. Explain personality and other important factors in selecting the proper wearing apparel.
10. What is meant by (a) instinct, (b) habit, (c) skill or technique?
11. Describe briefly how we acquire our knowledge of clothing.
12. Why is psychology important in advertising?
13. Define (a) knowledge, (b) observation, (c) experience, (d) attention, (e) memory, (f) association of ideas, (g) interest.
14. How are ideas relating to wearing apparel best remembered?
15. What is judgment? How is it obtained? Explain in terms of wearing apparel.
16. Define briefly: (a) reasoning, (b) knowledge, (c) information, (d) motive, (e) idea, (f) belief.
17. What are the steps necessary to secure a response for an advertisement?
18. What is meant by the expression "power of suggestion"? Why is it important in wearing apparel?
19. What is meant by the expression "original ideas"? Have we original ideas?
20. What is the difference between an instinct and emotion? Explain in terms of wearing apparel.
21. What is the difference between feelings and sentiments? Explain in terms of wearing apparel.
22. Explain the meaning of fear and how it may be overcome.
23. Explain how our psychological reactions affect the business of making wearing apparel.
24. Has any change taken place in our instincts during the history of the human race?
25. Are our instincts the same as those of the savage?
26. Explain the meaning of supply and demand from a psychological point of view.
27. Explain from a psychological point of view the morale of a textile mill employee.
28. Describe from the psychological point of view the impulse or desire for beautiful clothing and of appearing to advantage.
29. Why is clothing worn?
30. Why has clothing been worn in different ways by different people and in different civilizations?
31. Why are different types of clothing worn?
32. Why are different costumes worn by the sexes at different periods of life?

33. Show how the religions have influenced the costumes of different people.

34. Enumerate the different classes of people.

35. In reality, what are so-called "original" designs?

36. Why is it hard to protect designers by law, as authors and inventors are protected?

37. What instincts are played upon by the textile merchant to increase sales? Which is the strongest?

38. What is the psychological reason for jewelry?

39. What danger to the consumer lurks in attractive advertising?

40. How does a general lack of confidence on the part of the buying public affect business?

41. What is the appeal of the following materials: velvet, georgette, satin, lace, metal cloth, fur, linen?

42. How does the concept of modesty differ in various races?

43. In what three ways is the adornment of the body practiced?

44. Explain the six silhouettes from which stylists may evolve a fashionable mode of dress.

45. Describe the mode of dress for each of the "stages of man."

46. What is the history of the veil as an article of clothing?

47. Distinguish between a "tough mind" and a "tender mind."

## CHAPTER III

### SOCIOLOGICAL BASIS OF CLOTHING

**Importance.** In the previous chapter we discussed the psychological basis of clothing, and saw also that the workings of the mind are very closely related to, in fact are governed by, the social forces of which we are a part. Sociology is the science that explains the mechanism and behavior of society. Since economic progress is any change in the condition of individuals or members of society that tends to increase their welfare and their happiness, we can readily see the close relationship between the sociological, psychological, and economic factors of existence. We might say that economics is related to psychology and sociology because they provide the aims, hopes, aspirations, and standards toward which economics should tend.

Economics of clothing refers not only to the clothing of a single individual but also to that of his friends and neighbors as well. Hence its point of view is social and not individual. Society is a term we use to refer to any group of individuals or families composing a community within which exists a certain acquaintance, similarity, or common interest. The activities of members of such groups are called social activities and form the bonds or ties that prompt us to live together, work together, etc. — in other words, to coöperate. The more bonds or links that bind a society together, the more coöperation is experienced and the greater the happiness, wealth, and union.

**Social Science.** The economics of clothing has been defined as a study of the best experiences and efforts of the race in regard to the manufacturing, buying and selling, and consumption of clothing. It follows naturally that economic thought about clothing will change more or less with the social changes and conceptions of the people. The psychological reactions of the human race are influenced by sociological changes and in turn influence economic

theory. Since social conceptions and organization have changed widely from the time of the freedmen and slaves of the Greeks and Romans, to the period of serfs in the Middle Ages, and thence to the wage-earners of the factory system and the distinct coöperative system of industry under democracy, it is only natural that many of the old principles of economics are questioned in the light of modern business and social conditions.

It is easy to show by illustrations that economics is not a finished but a growing science and that economic thought is constantly changing in response to the sociological and psychological conditions of the people. Economists have been criticized because they did not predict the coming of the 1929-33 depression during the boom years, at least with any degree of definiteness. On the contrary a large number had created a false sense of security by pointing to the existence of a "new era," in which weaknesses in the economic structure that were known to breed depressions had been in the main eliminated. Economists have lost caste even more by their persistent inability to furnish effective leadership in pointing out a definite course of action that would halt the disastrous decline in prices and recession in business activity, and thus pave the way for the desired recovery.

Economics is generally regarded as having reached the stage of a "science" — by those willing to concede it this designation — more than a hundred years ago with the appearance of the work of the English classical writers. Since then a substantial and steadily growing number of writers and teachers have been concerned with economic questions and have collectively received the designation "economists."

There is, first, a group concerned with what is called "pure theory," deeply involved in drawing conclusions from simple and artificial premises by the application of logical or mathematical methods. Their work in the main has no more relation to the actual and pressing business problems of today than the activity of students of medieval scholasticism.

A second group of economists is concerned with the problem of forecasting future trends in business or finance, chiefly on the basis of statistical data. The idea of a "new era" was sponsored in the main by economists belonging within this category.

In the third place, there are a number of workers in the field, probably a large majority at the present time, who are concerned with the study and analysis of particular business problems, such as banking, the anti-trust laws, tariffs, marketing, etc. Such particular studies have brought about an enormous advance in the degree of understanding of the business mechanism which now exists. The analysis of many of these problems is still in its infancy, although steady progress is being made in many directions. Each recurring depression tends to puncture fallacies and misunderstandings that arise in the study of these problems, as cold facts teach new lessons.

The study of specific business problems of a single industry, such as wearing apparel, presents at the present time the brightest and most promising development in economics. Criticism of economists as a group because they did not predict the depression or show the way to end it may be justified, but there is no reason to despair as long as new lessons are learned and the knowledge of economic processes is expanded. Such simple truths as the contention that war debts and reparations constitute insurmountable barriers to the revival of trade and the international readjustment of prices, or that more effective methods of credit control are needed to prevent a repetition of speculative booms in the security markets, have obtained general adherence at the present time. It is reassuring that these views were taken years ago by several students of these problems who at the time received scant attention from the public at large. Thus we see that economic thought is still somewhat in advance of business practice and generally accepted ideas.

Men's actions are governed, ultimately, by their beliefs. A completely false belief, once established in the mind, is just as powerful a spring of action as one based upon eternal truth. Beliefs held in common by a large number of individuals become social forces in the strictest sense. They govern social action, determine social forms and institutions, and direct the course of social change.

**Opposing Theories.** Two of the most fundamental theories regarding our industrial system are the *laissez-faire* and the paternalistic theories. These theories are based upon the assumption that

what is good for the individual is necessarily good for the group, that a line of conduct which will promote personal welfare will also promote social welfare. While these theories may be true with a right-minded or conscientious person, they are not always true with all people.

The principle of every man for himself is as dangerous and fallacious in the economic and social realm as it is in clearing a theater during a fire. In the latter case it is to the immediate interest of the individual to run to the nearest exit. If he does so, however, and all others do likewise, there is a panic, exits are blocked, and hundreds die from suffocation, smoke, and fire.

The old theory of economics held that the chief cause of unemployment lay in the fact that most unemployed persons were either sick or "unfortunate." But calm statistical analysis shows that such inefficient persons make up only a small portion of the unemployed. Far more are out of work because of seasonal industry, technological advances, cycles of business, and the like — all strictly social causes which the individual can not control unaided.

Conventional remedies for unemployment are equally short-sighted. "Let the sick get well and the bums cease their shiftlessness." If they did they would only constitute so much more effective competition with the well and ambitious person out of work. "Let persons learn two trades so that they can dovetail them and adjust themselves to seasonal changes — work on both flowers and furs." But every person who does so drives out of employment a flower- or fur-worker.

Look at immigration policies that have prevailed in the last half century. People left Europe for America. It was expected that this would produce a double benefit. The emigrants would greatly improve their condition in the United States. By leaving Europe they would reduce the population pressure at home and allow standards of living to rise for those left behind. Actually, the excessive immigration to the United States has lowered our standards of living, reduced wages, and increased unemployment. Further, the gaps in Europe were quickly filled by an increase in population, leaving matters there as bad as ever. Some individuals profited by immigration, but Western society, as a whole has been gravely injured, particularly during the latter part of that movement.

Perhaps the worst illusion of recent years is that of cutting wages to end depression. The only way out of the depression under capitalism is increased buying power and activity. This must come chiefly from the wage-earners. Cutting their income simply prolongs the slump. The readiness with which employers resort to this expedient of lowering wages whenever hard times threaten is precisely one of the reasons why depressions gain headway so rapidly and last so long.

The tariff has been a respectable dogma for a century. Yet all that should be needed to uproot it is the simple truism that in the long run one can not sell unless he is willing and able to buy. So with stock speculation. When security prices are skyrocketing and out of all relation to capital investment and earning power, the only way the individual can profit is by selling his securities. But if all do so, then we have a crash like that of October, 1929. Further, consider installment buying. It may benefit the individual, but the industrial and commercial future of society is sadly handicapped when families have all their resources and future income applied to the payment of goods already consumed or being consumed.

In every case we find that the economic problem involved is social rather than individual, and that many existing ideas about economic matters will have to be modified to a more social interpretation of human life.

**Man a Social Being.** Human beings, even the savages, are naturally companionable to their neighbors. They exhibit very prominently characteristics that allow them to have their pleasures, benefits, happiness, duties, and interests together. These qualities, characteristics, instincts, or traits are the ones which bring people together to form society. Out of these traits or characteristics develops a feeling of "getting together" on larger and permanent interests, which we call coöperation. The primary coöperative agency that has arisen in all grades of civilization is the one in response to the desire to reproduce one's own kind, — that is, the family, — and out of this has grown the home. Although not so strong as the instinct of reproduction, the religious trait, the desire to pay homage to his Maker, has encouraged coöperative action. Another social activity developed only in

human beings of higher civilization is that of protection, out of which has grown the public safety department. The economic trait has lead to coöperative development of industry and commerce. These great characteristics are very important and are the basis of community and industrial life, of which clothing and wearing apparel form a foundation stone.

**Dress a Social Force.** Members of society soon realized that the spirit of coöperation and community or tribal life required that every one be as attractively dressed as possible in order to appear to advantage and to win the respect of others. Leaders of the various social groups began to formulate a manner of dress that would appeal to their followers and be based upon religious and geographical conditions. The dress of the leader would naturally be more attractive and more expensive than that of the followers in order to satisfy the desire for superiority and love of distinction. To illustrate: The nobility of China developed silk costumes, of which they kept the secret of production for centuries. The Egyptians used linens, because of their lasting qualities, and thus expressed their religious idea of the immortality of the soul. Purple, from an expensive and rare coloring fluid, obtained in small quantities from a species of fish, was the coloring used for decoration, and has remained so until the present time — royal purple. The cut and design of the costume for the nobility was expected to be elaborate in order to show that it was not adapted for manual work. The flowing costume of the Greeks illustrates this development. The time required to make costumes by hand was so great as to preclude frequent changes of clothing.

The clothing customs and habits that developed in individual countries and civilizations were gradually modified by the desires of the nobility or leaders, and by changing religious and industrial conditions. Usually distinctive forms of dress, in color and in trimmings, were adopted for the nobility and the freemen. The slaves and serfs used the clothing repaired and also cast-off clothing from their masters that had been remodeled to their needs.

As we glance over the history of civilization, we note that the work was done by slaves in the time of Greece; by serfs, who were half slaves, during the feudal times; and by the factory workers during the factory stage. Because the wearing apparel worn by

slaves and serfs was scanty and poor in quality, it gave rise to the feeling that work meant meager clothing. Even up to the last generation or so, factory workers and mechanics wore clothing in the form of rags, because of age and wear. Bosses, designers, etc., frequently went to work with silk hats and canes. The nobility, the professional class, and the scholars wore elaborate clothing in bright colors; for instance, note the colors of costumes worn by holders of academic and professional degrees. Today we refer to members of the "white collar" working class to distinguish them from those who toil on machines and with tools.

Custom and tradition have established certain clothing styles that seem to resist any movement toward a change. To illustrate: Note the costumes worn at the church services, court costumes, the costumes of judges and lawyers in England, gowns worn at college exercises, wedding costumes, etc.

Under the old aristocratic forms of government, fashions of wearing apparel seldom changed. Laws were passed preventing members of the lower classes from copying the costumes of the classes above them. The poorer people in their ignorance and isolation became alarmed at new ideas in clothing and naturally clung to their national costumes featuring needle work and color.

In eastern countries, where the religious and social conditions are very strict, and the temperature is very constant, the styles of clothing are fairly constant.

The desire of the freemen and wealthy citizens to imitate the dress of the nobility caused the establishment in early ages of laws forbidding people to wear certain forms of wearing apparel. To illustrate:

(a) The use of the color purple was restricted to the nobility among the Greeks and Romans.

(b) The Roman law at first forbade the use of silk for men.

(c) During the Middle Ages kings frequently designated the kind of wearing apparel for the nobility.

History shows us that even during later periods the economic life of communities, including the type of wearing apparel, has been dominated in a more or less direct manner by such factors as:

(1) Religious ideals and church organizations, (2) political aims of statesmen and party politics, (3) class prejudices and

social conventions, (4) changes in industrial policy, (5) changes in taste and fashion, etc.

In some countries certain types of clothing and accessories are absolutely necessary, while in other countries they are not required or used. Take the fan for example. In Japan, the fan is as universal as a garment, constituting as truly as any other clothing accessory one of the necessities of life. It is at all seasons an inseparable part of the Japanese dress. It is a shelter from the sun, a protection from the rain, a note-book, and a plaything. In America a fan is an accessory that comes and goes with fashion.

The changes in the use of the ordinary handkerchief illustrate a similar modification because of changing conditions. At first the handkerchief was a bit of silk tissue fabric used centuries ago by priests at the altar. For many years, indeed, priests were the only persons in the European world allowed the privilege of using handkerchiefs at all, and they used them only at the altar for the sake of propriety. It was then called a "facial," and was left with the other vestments of worship when the service was done. Presently the grand ladies of the court began to provide themselves with similar squares of silk. The next step was to embroider the edge of these squares. The Empress Josephine was lovely, but her teeth were not perfect, and in order to conceal them she used a small lace handkerchief, which she raised constantly to her lips. The ladies at the French court at once adopted the fashion, and handkerchiefs came into general use. Soon their convenience recommended them so highly that all the ladies and gentlemen connected with the various European courts adopted their use. The fashion thus introduced by royalty was soon taken up by the common people till today the handkerchief is an indispensable article of apparel.

**Carpets.** Similar changes took place in the textiles used in the home, such as floor coverings. Carpets also were first used by priests for religious purposes. Later carpets and rugs were used by oriental people for kneeling in religious exercises and for sitting or reclining. Skill in weaving carpets has been handed down from the ancient Babylonians to the Persians of the present day.

Among the common people of Europe the earlier type of floor covering was a thin spread of straw or sweet-smelling rushes.

Until 1840 all weaving of rugs and carpets was performed by hand and their use was naturally restricted to the more wealthy homes. Today, because of the invention of machinery, beautiful and durable rugs and carpets are within the reach of all classes of people.

**Factors of Society.** Wearing apparel has been influenced by habit and custom. The three most important factors in the life of society are habit, custom, and social organization. Habit has been discussed in the previous chapter. Custom is the practice or usual manner of doing a thing. That is, certain behavior is the common practice of society, hence we all, because of our instinct of imitation, tend to follow the prevailing custom of the society of which we are part. Custom is the main principle of social control. As the result of years of tradition, different countries thus tend to build up different ways of performing the same acts, different recreations, different educational systems, social codes, etc. All these traditions and customs tend to determine a country's standard of life, in clothing as well as in other realms. Certain examples will show how habit, custom, and social organization have determined and regulated the clothing worn at different periods and in different countries :

- (a) The use of kilts or skirts for men in Scotland.
- (b) The wearing of trousers by the women of China.
- (c) The veiling of women in Mohammedan countries.

The great part played by social organization in determining the type of economic life will be discussed later.

**Social Mind.** It is surprising how quickly members of a community will acquire new ideas or imitate the actions and ideas of their leaders in regard to clothing, etc. Contrary to the idea of many people, there is no such thing as a community or social mind. Each individual of society has a mind of his own, but through imitation, sociability, sympathy, and suggestion, a certain unity of thought develops that is often called the social mind. Fashion of clothing is an excellent example.

If we follow very closely the history of civilization, we shall find that the "social mind" of each period is dominated by the ideals of that period. Each period of history, each civilization, has its theory of the aim and purpose of the things of life, which we may call its peculiar philosophy of life. In some periods —

Puritan New England — life was severe and beauty and pleasure were considered sinful. No one in that section could have other ideals. The same is true with all other periods. These different ideals of different peoples constitute a valuable contribution to history, as they show the many ways of going through life. By taking the best of all the ideals we shall secure a well-balanced life — democracy — every one to lead a happy useful life, to be a source of joy to his family and an asset to his country. It is not well for a democratic community to be divided into sharp class distinctions, all with different social aims.



GROTESQUE FIGURES

The “social mind” may have a serious or semi-ludicrous point of view, which may prevail at any time, and is called a “mental epidemic.” Certain fashions are special types of mental epidemics, especially the extremes of fashion, involving many motives, all based upon the human instincts.

Few of us realize how quickly we respect the rules, standards, and conventions generally

adopted by society. This readiness to adapt our ideas and actions is due to the fact that from birth to death we are under educational influences, either direct or indirect, formal or informal, that mold us unconsciously to the accepted customs. Thus we wear clothing that will meet with the approval of public opinion. Conformity to the established conventions and morality is usually brought about by social pressure — a threat or fear of ridicule, contempt, or social ostracism. When public opinion, the social method of control, fails, the state may step in and supplement the control by physical restraint. The practices of certain people, called “nudists,” who would like to have both sexes go about, go in bathing, and take sun baths without clothing, are contrary to the accepted conventions in this country. Therefore we find the police stepping in and restraining the nudist movement, sometimes by placing offenders in jail.

**Culture Mass.** The accumulated ideas, customs, and habits that a society inherits and constantly adds to are sometimes called the culture mass of the society. This accumulated culture is carried from place to place by mail, telegraph, and telephone, by writing and printing, and is now broadcast by means of the radio. By increased interaction of social organizations we are now influenced by the ideas of persons many miles away. Thus our culture mass is infinitely broader than that of ancient civilizations. Nevertheless, just as children in the wilds of Africa acquire the ideas and morality standards of the uncivilized African, the lives of all of us depend a great deal upon the culture mass that surrounds us. The children of savages will follow the example of their parents and will go with little or no clothing. American children will tend to follow the prevailing standards of dress in our own country today.

**Culture of Each Race.** Differences in the culture mass of various races result in many varied expressions of that culture. The ways in which such universal instincts as the love of the beautiful have been developed in the different societies illustrate the effect of the cultural background. Note, for example, the artistic cotton fabrics that were designed and made in India. A history of those beautiful cotton prints reads like a romance.

The India chintzes were in much demand in Europe long before the art of making them had been introduced and simplified there. Most of them were made by very tedious processes, a great part of the pattern being colored by hand. The parts intended to be white were covered with wax before the material was thrown into the dye-vat, and the process of removing the wax afterwards required considerable time and no small amount of patience. Small quantities of these chintzes were shipped to England and Holland as early as the 12th century, and there seems to be little doubt that an attempt was made in Europe in the direction of printing patterns on cotton as early as 1634. The introduction of cotton printing into Europe is due mainly to the Dutch, and the Dutch East India Company had taken the India chintzes to Holland before they were heard of in England. Flemish emigrants imported the art to England about 1676, and later other works sprang up to supply the London shops with chintzes, their importation

from India having been prohibited by parliament in 1700. This infringement of the rights of consumers having been received with equanimity, parliament next proceeded to pass a law prohibiting the wearing of all printed cottons — a law that actually remained in force for sixteen years and nipped the rising industry in the bud.

Other countries have made the following contributions to textiles and wearing apparel, as their part of culture :

(a) India, Turkey, and Persia — floor coverings of exquisite designs, colors, and symbolism.

(b) China — velvets, embroideries of rich design and color, coolie coats, designs for leisure clothing, etc.

(c) France — silk fabrics, tapestries, rich designs, and inspirations for wearing apparel.

(d) Japan — kimono.

(e) Switzerland — laces, embroideries of rich design.

(f) Belgium — laces and other textiles of rich design.

(g) Italy — rich samples of old brocades, damasks, velvets.

(h) Spain — shawls, veils, etc.

(i) Greece — rich inspiration of art, draping effects of clothing.

(j) Slavonic countries — Beautiful samples of embroideries in colors.

**Social Influence of Clothing.** According to statisticians, there are about five hundred million of the human race who are well clothed — that is, who wear complete garments of some kind. Seven hundred million cover only certain parts of the body, and two hundred and fifty million go entirely naked. History teaches us that man originated in tropical regions, hence it is reasonable to suppose that on account of the mildness of the climate, the garments adopted by man in the first stages of his existence consisted of only such as were required for decency. As the population of the earth grew, gradually extending northward to less favorable regions, and was divided into nations and classes of society, additional clothing became necessary, both for comfort and as a distinguishing badge of nation or of class. Philosophers assert that clothes are our friends or our foes all the days of our lives. They affect our health, to say nothing of our worldly credit, and are never without some influence, pleasurable or the reverse, upon our associates.

**Clothing and Domestic Life.** Since the making of yarn, cloth, and clothes was, up to a century ago, carried on in the home as part of the household duties, it is very natural that the social life and home life should be tied up very closely to spinning and weaving. In fact, women were expected to spend all their leisure time sewing or knitting, and a definite part of the day was devoted to spinning and weaving. The only time allowed for relaxation were the few days at the religious festivals such as Christmas. To illustrate: St. Distaff's Day is the seventh of January, the day after the Twelfth Day, or Epiphany, so called in England because on that day the women resumed their distaffs and other ordinary employments after the relaxation of the holidays.

From early history, when man lived in caves and wore the skins of animals to our present times, clothing has been intimately associated with the home and social life, even to the extent of providing us with family names, recreation, and designation of rank.

In Great Britain, the early inhabitants were thoroughly acquainted with the making of cloth, and the weavers of London established the most ancient guild in Europe. Their occupation gave rise to many surnames, which are easily recognized in the United States at the present time. For a long period wool was the staple product of England, and thousands of busy operatives were employed in the various processes of spinning and weaving necessary before the wool could be transferred from the back of the sheep to the back of man. At every step proper names sprang up, indicative of the calling of those who bore them. Were we ignorant of the fact that our ancestors, the Saxons, dealt in wool and made cloth, we might draw perfectly correct and legitimate conclusions as to the trade, its extent, and various departments, from the family names still surviving. In the first place, the sheep were cared for by the Shepard or Shepherd, a family name that, with variations of spelling, is extremely common both in this country and England. Shearing was the first operation requiring either delicacy or skill, and Shearer, Shearman, Shurman, and similar names bespeak their own ancestry. The wool was then placed in bags, made by the sackers or canvassers, and was ready for the merchant, an individual often known by

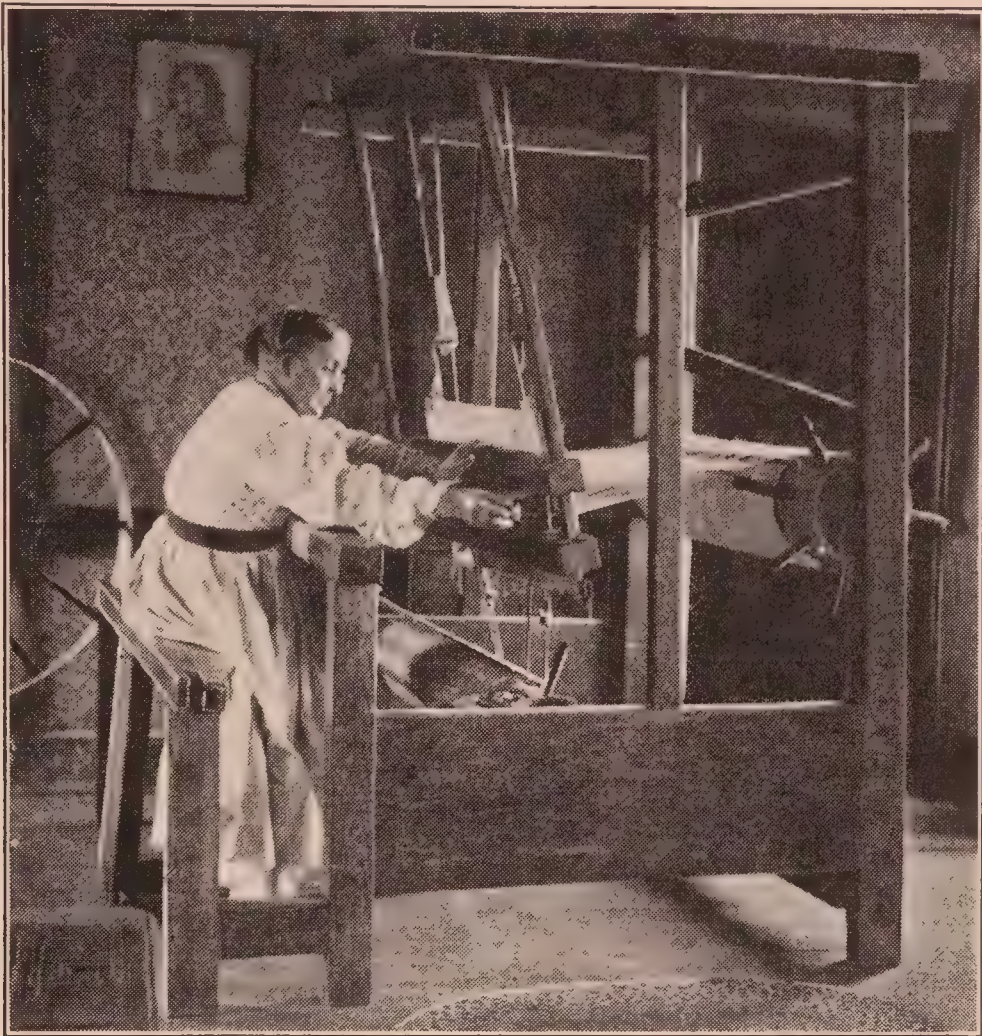
the name of Stapler, Wool, Wooler, Wollman, or Woolsey, or in French as Lanier or Lanyer. He consigned it to the care of persons who transported it from place to place on the backs of pack horses or in vehicles, and were thus known as the Packers, the Carters, or the Carriers. The wool was then handed over to the Carders and Combers, or Kempers and Kemsters, as they were variously called, and passed from their hands to those of the Spinners, who used implements made by the Spindlers and Slayers.

It went afterwards to the Weavers, Weevers, Webbs, Webbers, or feminine Websters. The cloth was next "teased" to bring out the nap, a process done by the Teasers, Tosers, Teazelers, or Taylors, when the woollen cloth was finished and ready for the Dyer, Litter, or Lister. The Fullers, Fullertons, Fullersons, and Fullmans undertook the process of shrinking the cloth, in which they were assisted by the Walkers, who trod it with their feet, and by the Beaters, Beatermans, Bates, Batts, and Battsman, who used sticks, bats, and mallets instead of their heels and toes. The designation of each process gave a name to all engaged in a special work, just as at the present time, and was adopted in these early days as a family name by some who perhaps attained notable excellence over their fellows, or were led by chance or caprice to adopt the title of their calling as their own surname.

It will doubtless interest many to learn that the domestic title "wife" is derived from "to weave," since she was distinguished from the others in her family in the olden time by her labors at the loom. The Saxon word for weave was *wefan*, and was also applied to a woman who worked at the loom and made a web. The adoption of the name "wife" from the art of weaving is a natural sequence to giving the name of "spinster" to an unmarried woman, for the girl was supposed to spin the yarn for the clothing she was to wear in the future as a wife. For centuries preceding Cartwright's invention of the power loom, each household to a large degree manufactured its own cloth and made its own clothing. It was the common practice of the husband and sons to tend the sheep and cultivate the flax; of the "spinsters" to prepare the yarns, and of the "wives" to weave the cloth.

The early history of the manufacture of sewing silk in America illustrates its development as a household art. More than a hun-

dred years ago, silk thread-making promised to develop into a great industry. Throughout New England, Pennsylvania, Delaware, and South Carolina during the colonial period, the production of sewing silk was a household art, the present manufacture being



A SIMPLE HAND-LOOM

a development of that early fireside industry. In the years immediately preceding and following the Revolution, when the country was impoverished and money extremely scarce, the women of New England adopted silk-culture as a means of obtaining a livelihood. Their chief product was skein silk. The methods of reeling and twisting the thread were very primitive, and much of the silk became tangled and wasted. The lustrous fiber was unwound from the cocoons upon clumsy hand-reels, the threads twisted on spinning-wheels made for wool, and the precious skeins dyed in pans and kettles ordinarily used for domestic purposes. After dyeing, the thread was made into skeins containing twenty threads, each two yards long; twenty-five skeins

constituted a "bunch," and four bunches a "package." Because of the lack of money, this skein silk took its place, and in New England particularly it was very generally exchanged (bartered) at the stores and shops for the necessities of life. At this period the homemade product was worth \$1 per ounce.

In 1656 the colonial government of Massachusetts enacted a statute requiring each family to spin three pounds of wool, cotton, or flax a week, for thirty weeks each year. In the same year the first weaver to settle in Massachusetts began operations at Lowell. He was tendered official encouragement in the form of a grant of thirty acres of land.

**Progress.** The progressive development of the clothing industries today has made wonderful contributions to our health and happiness. The lack of progress in the manufacture and use of clothing in primitive times was due to the inertia of the people. They disliked any form of change. As civilization developed, progress became more rapid, until today there is a positive desire on the part of all, particularly in this country and in most others, for improvements in both organization and methods of the manufacture.

The progress in the manufacture of clothing has been due to the many inventions of automatic machinery, which have increased production and reduced the cost of the finished article. Improvements have also been made in raw materials and in organization. This progress has given us a larger product with a smaller expenditure of human effort, and thus given us leisure. The result of this leisure time has been to contribute to mental, social, and emotional development. In primitive times the struggle for existence was so great as to leave no time for leisure or enjoyment of the higher things of life, such as music, art, literature, good clothes, etc. The exchange of thoughts, influence of mind upon mind, comes from the companionship of people and depends greatly on leisure and improved means of communication.

As society becomes wealthier and more educated it develops wants for clothing that are more numerous and diversified. Naturally it puts forth greater efforts to satisfy these wants. These efforts to satisfy their desire for more and better wearing apparel are part of the various activities entering into the economics of clothing.

Our standards of clothing, or properly designed clothing, called dress, change with our standards of living. What is meant by the "best" standard of living is not necessarily the ideal standard of living, but the satisfaction of the habits and requirements of life generally practiced in a given community or country at a given period by the higher classes. Hence we see that our standard of living and clothing is distinctly social, governed by the demands and needs of our neighbors.

**Use of Wearing Apparel.** The economic condition of a people has had much to do with the kind and amount of clothing worn. In ancient times in Sparta it took a year to make one costume, since all operations had to be done by hand, including the carding, spinning, and weaving of the cloth. The costume, when finished, was used for several generations. A complete wardrobe early in the 19th century cost \$4000. All clothing was manufactured by hand and sold direct to the consumer. Before the advent of machinery shoes cost from \$10 to \$25 a pair; as a result many persons went barefoot.

Today, because of modern methods of manufacture and the use of machinery, a complete costume can be made, from the shearing of the wool to the finished product, within a period of twenty-four hours. Some kind of wholesome and attractive clothing is now within the reach of even the poorest classes.

**Standards of Living.** Our standards of living, including our taste in clothing, are the results of our social background and the training or education we have received. Since society in this country is open, without such distinct barriers as the caste system in India, it is natural that people with the same culture and interests should form a homogeneous settlement. Our civilized society, while guided by the same instincts and desires as an uncivilized society, has made certain advances in culture and education, and as a result has acquired finer tastes and more varied desires. The uncivilized have the same fundamental desires but express them in a crude, unrefined manner according to their lower standards. While civilized society selects better and more artistic clothing, we often find much to admire in certain ornaments or decorations used by the savage or semi-civilized races. Note the artistic designs of clothing worn by the women of Java.

**The American Standard of Living.** When we speak of the American standard of living, we do not mean an ideal system of living, but the habits and requirements of life in a community or grade of society at a given time. To illustrate: The standard of life of the ordinary workingman in the United States includes clothing, food, and shelter of a kind quite different from those of the workingman in China or any other country. In addition, the standards of life include the machinery for ministering to the wants of the people, methods of social intercourse, recreation, etc.

Many forces at work for a long time on the character and environment of a class have much to do with its standard of living, particularly in the matter of clothing. In many cases in our own country it is possible to express the standard of living in terms of money, which is called the cost of living. Nevertheless, it is impossible in a complete analysis to include all elements of the standard of life in terms of money. For we must remember there are a few that differ from the majority of individuals in tastes, capacity for management, etc.

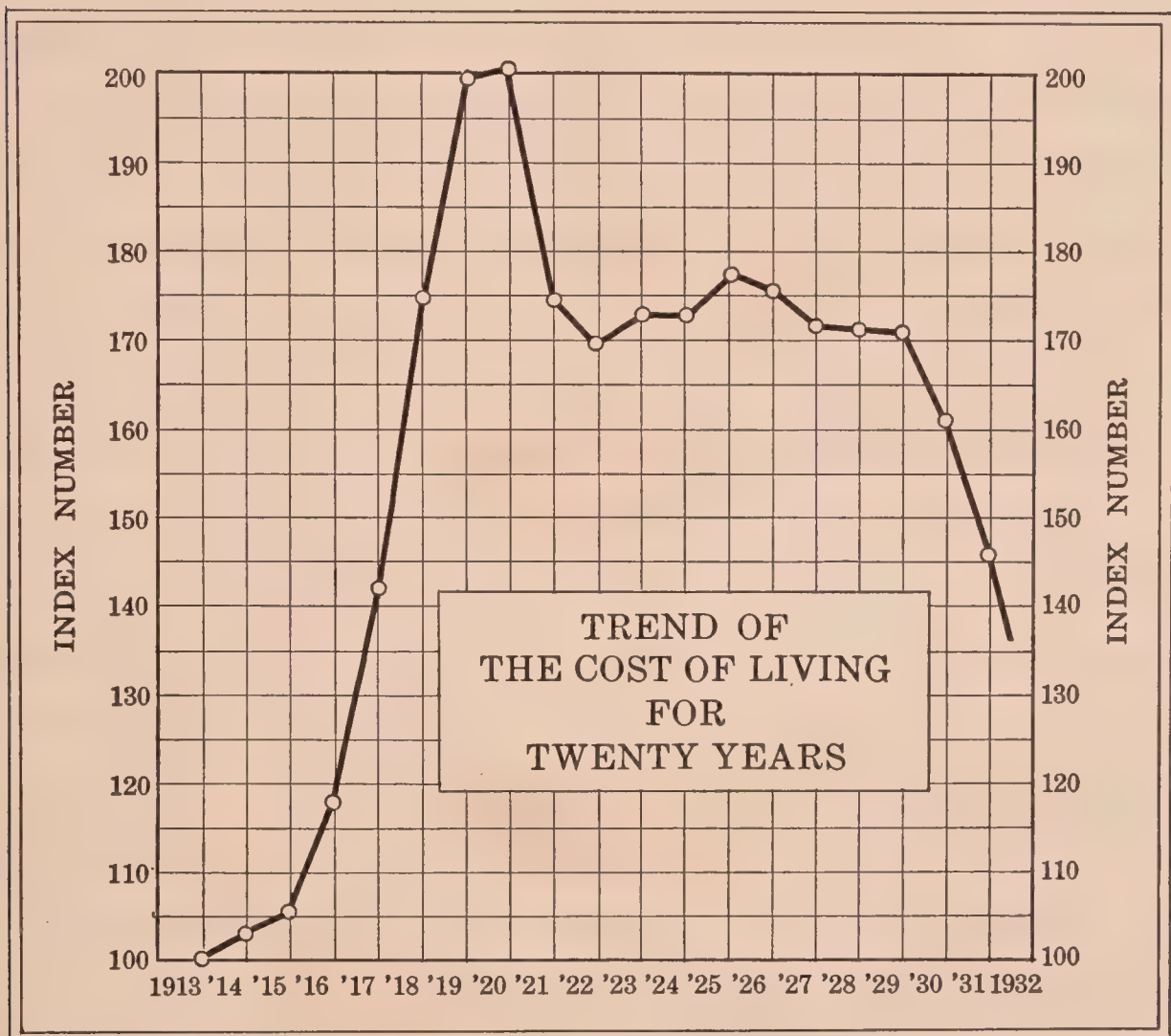
There has existed more or less among the people of the world since the time of Greece the idea that the prosperity of any society depended in a large degree upon the existence within it of a large mass of ignorant poor. This notion still prevails among us, and we feel that the prosperity of part of the people depends upon the adversity of the rest of the people. All of which means that the poor should not know the joys of life, including a variety of clothing.

This theory is very destructive, and has caused much harm. It is due to the old tradition handed down to us from the ages when a caste system existed. Such a theory is undemocratic. Economists know that it is possible for an economic society to expand and improve living standards as it raises the productivity of labor. The partial abolition of poverty has become a business necessity, lest prosperity be permanently destroyed by an insufficiency of buyers.

A higher standard of living is not represented merely by goods. It includes more leisure, better education, better care of health, more travel, better wearing apparel, and more spent for that which

is beautiful as well as useful. American civilization has gone a long way, but it still has far to go toward improving the wearing apparel of all the people.

Any movement or cause that tends to lower the cost of wearing apparel will tend to increase the welfare of the people by giving them more necessities and luxuries in clothing, thus producing more happiness.



By raising the standard of living we naturally increase the ambition of the worker, so that he tends to exert greater efforts to meet his needs or wants. Of course, we must bear in mind that the tendency to raise the standard of living sometimes decreases the size of the family.

With the increase of the standard of living of the lower and middle classes would come a desire to buy more clothing and services, which in turn would increase the market. Advertising would suggest these wants, and readers would desire to satisfy

them. Increased purchasing power of the laboring class is the best sign of prosperity. Ignorance and poverty, on the other hand, tend to breed social unrest.

The increase in the living standard of the American people above all other nations is due to (1) the natural resources which have been highly developed, (2) the harnessing of water falls, and utilization of electrical and gas energy on a large scale, resulting in cheap power, (3) utilization of automatic machinery and mass production, (4) ability of the American to adapt himself through coöperation to large organizations and the use of efficient machine methods, (5) combination of labor into unions under efficient leadership, (6) a friendly spirit between labor and capital, (7) installment buying, (8) a large home (domestic) market without tariff restrictions, (9) protection against excess of imports by a protective tariff, (10) immigration restrictions which have eliminated the classes with very low standards of living, (11) higher standards of appreciation of the uses and joys of a variety of wearing apparel, (12) ability of producers to supply wearing apparel both useful and artistic, within the reach of all consumers.

Since the family is the unit of society, it follows that in the interest of social welfare the family should be kept from the horrors of poverty, famine, pestilence, etc. How can these conditions be kept from the family? We have seen that these can be prevented by efficient living or a proper standard of living. This standard of living determines the necessary income of the family. For most people this income is derived from the earnings, wages, or salary of the head of the family.

What determines the standard of living? The standard represents the needs of a family; that is, the goods and services that are regarded as necessary and that they will attempt to obtain at any sacrifice. Observation will show us that this standard varies with different classes: (a) leisure, (b) professional, (c) business, (d) mechanic, (e) laborer, etc.

The minimum standard is the standard adopted by the ordinary family of a class living in frugal circumstances; that is, exercising economy and avoiding waste in all forms of living. The income or wage sufficient to meet the minimum standard of living is called the *minimum wage*. The amount of this wage in money, of course,

varies from time to time with different classes and by different estimates of the things that may be included among the necessities.

The minimum wage should be established for the lowest type of unskilled labor, and should be enough to support a family in frugal circumstances. If there is any industry that can not afford to pay such a minimum wage, such trade or branch of industry is un-American in principle and should not be allowed to exist. Low grade labor is usually highly supervised. Part of the cost of supervision could then go to labor.

Since industry employs many types of workers, it follows that there should be a difference in the wages paid, from the minimum to the highest. The differences in wage rate, called *differentials*, should be sufficient to give at least a wage for the minimum standard of living for each class.

**Social Standard Wage.** The welfare of the community demands that each component of the community should enjoy equitable rights; if these are denied, social discontent and disunion, class hostility and conflicts arise. Social justice concerns itself with the outward actions of men in their bearing on the common welfare. Therefore, justice demands the natural right to live in accordance with the dignity of one's personal nature; that is, having clothing, food, shelter, proper comfort, money for raising a family, leisure for attending to one's mental, moral, and religious development. The social standard wage is one that will provide these rights.

**Social Organizations.** Society readily devises schemes, methods, and plans for accomplishing activities that are for the common welfare. Such arrangements are the basis of social organization and comprise a definite program of social activities that has been developed over a long period of time. In a civilization such as ours, the social organization is developed to a high state of complexity, requiring a high degree of coöperation for its successful functioning.

The reason that the members of the community adopt the same standards is because their strength or common advantage in both physical and moral phases is best realized by combined action. A community is composed of individuals of varying types or moods; therefore the will power of the different types will vary.

When this difference is sufficient to cause a lack of uniformity in social standards it tends to destroy the common end. In order to carry the wishes or actions of the members to the highest success, it is necessary that the people be organized into communities or societies like the town, city, state, and nation.

The success of any society, community, or business organization depends largely upon the degree of coöperation. To illustrate: The success of a dry-goods store depends upon the ability of each employee to work with the rest of the store organization in perfect harmony, to secure high efficiency with the least effort. Coöperation of the highest type with department heads and executives and also with manufacturers has done much to improve a buyer's performance.

A fine spirit of coöperation on the part of business associates as well as nations will promote friendship, efficiency, and harmony. On the other hand, a lack of coöperation will lead to friction, exploitation, and rivalry. Due to the rapid communication between the different nations important events and attitudes in one country are reported in every other country within a few hours after they have arisen. As a result, all the nations of the world are interdependent to a large degree, not only in culture, politics, and economics, but in such specific commodities as clothing. We obtain silk from Japan, rugs from Persia, linen from Ireland, etc. This interdependence is recognized to a high degree, and the political and trade relations of our nation are influenced by representatives sent to each country. In a similar manner other countries send diplomatic and trade representatives to this country.

The League of Nations is an attempt at still greater coöperation between the various nations of the world. From time to time, international conferences are held in an attempt to settle such disputes among nations as the question of tariff walls, taxation on imported textiles, clothing, and the like.

**Business Organization.** In order to meet the needs and wants of society, certain general principles for the organization and conduct of business have been developed to insure a certain degree of efficiency and to give employment to the members of society. One of the greatest prizes of life as it is organized today is the acquisition of money, and naturally money, more than anything

else, prompts people in their choice of work. Hence most people try to enter into those lines of employment or business that give the greatest money return.

Since society is composed of groups of individuals with common interests, it is only natural that these common interests often conflict with the self-centered interests of some individuals. So it is natural that society, after years of experience, should determine certain conditions governing business that give the greatest economic benefit. These conditions may be expressed as follows, and society encourages its numbers to heed them :

(a) Produce those goods that are of greatest benefit to society as a whole, rather than to a few individuals.

(b) The production of these goods should be carried on in the largest quantities until the needs of the people are satisfied.

(c) These goods should be sold at the lowest possible prices.

The individual with his self-centered interest is anxious to seek his own advantage, which may include the production of goods for a selected few, *i.e.*, luxuries of wearing apparel, so that he can make as much money as possible with the least amount of effort.

Hence society encourages business to develop to the highest degree of efficiency so as to produce wearing apparel and other necessities and to introduce luxuries of all kinds to all classes of people, not only to meet their needs but also to provide employment to members of society.

**Division of Labor.** From early times to the present, human nature has gradually become accustomed to regular habits of work and to the use of tools. As soon as groups of individuals become proficient in one line of work they develop that line and become specialists.

Subdivision of labor often becomes monotonous and wearisome. The employment of the senses and muscles in the same way all the time becomes distasteful and even painful. The advantages of the subdivision of labor should bring shorter hours and more pay to the laborer. The shorter hours balance and overcome to some extent the disagreeable features of the work.

**Private Ownership of Property.** Two of the most important institutions of human society are the family and private property. Each member of society is entitled to the pleasures of family life

and to the use and control of whatever property he owns (private property). Society early recognized these two rights and protects the members of society in maintaining them. Of course the right to private property may be modified whenever society feels that it is necessary for the best interest of its members, but this can be done only by legal or legislative action.

For centuries society has extended to its members property rights over the goods they possess. The desire to possess goods encourages us to work harder in order to possess as much as possible. On the other hand, society demands in return for the running of the government: (a) the right to take part of the property in form of money for taxes, (b) the right to seize property in time of war for military purposes, with a fair compensation for owners, (c) the right to seize property at a fair compensation for increasing the public welfare (the right of eminent domain), (d) the right to enforce proper use of private property — use in a way that will not conflict with the rights of others.

Society allows an individual to engage in any trade or profession (the right of freedom of enterprise), provided the business does not interfere with society in general and provided the person is properly qualified to do the work. The right to conduct public corporations, like railways, etc., requires a franchise or special permission from the government.

**Social Monopolies.** In order to encourage new ideas and inventions, society has given to inventors, designers, etc., a right called a *patent* — that is, a monopoly or exclusive privilege for a number of years to produce that invention or design. This form of monopoly is a legal monopoly as compared with a business or a natural monopoly. A business monopoly is the control of commodities, business, or resources of nature in such a way as to enable the person or persons exercising it to fix prices (such as a registered-name fabric). Whatever is marketable, as material goods, labor, natural resources, or money, may be the subject-matter of monopoly. The essence of monopoly does not consist in exclusive ownership, but in exclusive or dominating power to regulate the market in regard to things that are not of their nature the exclusive possession of an individual or body of individuals, and that, therefore, are subject to competition. The government has an Anti-Trust

Law (Sherman Act) that prevents producers from combining to fix prices. Many people feel that such a law is a hardship during a depression, when there is a tendency to lower prices below cost of production, resulting in driving many manufacturers out of business.

We have seen in the previous pages of this chapter that everything — industry, commerce, etc. — exists for society. Society consists of groups of families and people living together for the development of the family and the happiness due to social activities. Society created industry and commerce to provide means of meeting these wants and also to provide employment for each member of society able to work.

Society is most efficient when it can meet the needs of its members and provide continuous employment for all those able to contribute to the success of society. This requires that the population should be distributed in such a manner as to provide homes for all and sufficient land or labor for every one. If there is an excess of labor there is unemployment, and society suffers.

While inventions and processes for quickening the production of commodities — such as automatic looms for weaving cloth, etc. — have met the needs of all members of society, in many cases they have (*a*) been the means of replacing many members of society as workers, thus causing unemployment and not giving them the power to purchase the necessities of family life, and (*b*) also increased production so as to cause excess of certain commodities.

Many manufacturers and inventors are intensely selfish and self-seeking and lack high social ideals. While they may not always be able to see the future and evil influences of machine production, nevertheless every producer, inventor, and consumer should have sufficient knowledge of industrial history and of the principles of economics to see clearly the effects of inventions and machinery on the welfare and progress of society. Producers and inventors should exercise intelligence and sympathy in placing on the market machines and processes for more production and replacement of workers, so that it may be done gradually and systematically. In this manner society can make readjustments through new sources of employment, or a shorter working week, so as to absorb the excess units of labor released by the invention of new methods of production.

We must remember that the invention of new machinery and processes is not a complete end in itself, but is one of the factors for meeting the needs of society — human satisfaction. The machine or process by itself is nothing unless it serves the best interests of all of society — humanity.

During the last hundred years and particularly during the last generation, the invention of machines and processes has multiplied the productiveness of human labor, while reducing the physical fatigue that has gone with labor. It is true that as a result of these inventions, particularly in clothing, we have obtained higher standards of living and no doubt shall attain still higher standards. But with the invention of new machines and processes there have developed social problems in employment and overproduction of certain kinds of clothing, so that there are times when the machinery is idle and human beings are out of work — unable to have the necessities of life — and live in squalor and want. In other words, new inventions have provided machines that have outstripped social progress and upset the social economic balance of employment and the needs of the people for the commodities.

**Individual Rights.** Since society represents a group and the moral code represents the standard that is considered best for the majority, it follows that society must consider the natural rights and the social or legal right of every member of society. The natural right of man — called the natural law — represents the rule of conduct dictated by common sense and the conscience of mankind and is a law of self-defense or of the right to live, while the social right is a need of man that society must also protect. Society may or may not protect the natural rights of man, but the right of contract is a right that society must protect. The right to protect children and women from long hours of employment is a social right today. New laws prevent sweatshop work in tenements, compel manufacturers to assume accident risks and to permit employees to join unions, allowing collective bargaining. Many natural rights have become legal rights in the process of human development.

For centuries it was considered proper, and a moral and legal right, for an owner to do as he pleased with his investment or property, but today with the growth of democracy the belief has

developed that the great mass of working people constitute society and therefore must have a voice in the management of industry. Our ideas as to the natural law have changed and are constantly changing, and these changes affect our social and industrial system.

No industry has greater problems than the textile and the clothing trades. Due to the rapid development of textile mills and clothing shops or factories and to the use of power and automatic machinery, the production of cloth and costumes has been on such a large scale that the great middle class of small textile manufacturers and tailors and dressmakers has rapidly disappeared. As a result there has been a tendency toward the formation of two extreme classes in the textile-clothing-factory system — a small number of wealthy manufacturers and a multitude of workers, many of whom receive very small wages. The manufacturers themselves have found that there were many who engaged in sharp practices and other means to defraud. Hence society has provided means for removing these evil practices.

In every group of people you will find two conflicting factors: (a) coöperation and (b) disagreement. That is, there are always displayed the instincts of coöperation or working together, and disagreements or differences of opinion. These two instincts may appear to be distinctly opposed and eventually destructive, but the instinct of coöperation is stronger because mankind must always live in groups, and hence there is always a desire to agree and a procedure of agreeing until the decision of the majority is adopted.

Of course, due to lack of unity of mind and lack of constancy of will on the part of human nature, there is a tendency on the part of man to feel that society curbs his individual rights. While this is true in limiting his individual good, it obtains for him a greater good by life in society and frees him from many evils. The same is true in the distribution of the social income. Labor feels that it has not received its just proportion, hence the constant disputes between mill workers and owners, garment workers and garment manufacturers.

At the beginning of the industrial era and the factory system, the theory of unrestricted competition in trade meant that the

employer, having many units of workers, might increase his wealth quickly and become very powerful, while the laborers became weak because of long hours of work and low wages.

As a result society stepped in and government has attempted at various times to pass laws regulating such matters as (a) hours of labor, (b) juvenile employment, (c) minimum wage, (d) compensation insurance for injuries of workmen, (e) restriction of immigration, etc.

When the textile and clothing industry was transferred from the home to the independent establishment or small shop, there naturally remained a desire on the part of many workers to do textile and clothing work at home. The poverty of many of the families meant that they did the work at a small compensation amidst dirt, disease, etc. Establishments whose work was done under such conditions were called "sweat shops."

Since much of the work in the textile industry is of an intermittent character, such as changing bobbins or spools and then resting before another change, and since broken threads had to be pieced or mended, there easily grew up a demand for juvenile labor, even as young as seven years of age. The juvenile help became accustomed to mill conditions and became future weavers, etc. Today, because of automatic machinery that has increased the productive power of the mills, it has been possible to do away, in a large degree, with child labor.

A new conception of the duty of the managers of great industries has gradually developed. The old notion that it should be their chief concern to "take as much as possible from workers and the public for the benefit of stockholders" has gone never to return. Any company now large enough to be affected with a public interest must have officers who regard themselves and act as trustees with a threefold responsibility toward investors, toward workers, and toward consumers. The heads of great companies must decide what should be done during times of depression. How shall the business be kept going? Where can severe economies be made and where must they end? How shall men who have to be laid off, or given part-time work, be dealt with in an emergency that it is hoped will be temporary? The ancient view that wages need not rise higher than the "subsistence level" broke

down in practice, and had to be modified by legislation. An entirely new thought about managerial responsibility has come to be dominant in the modern world. The profit-motive remains and must remain, but it is no longer supreme. The humanity-motive has entered. A spirit of fair play, neighborly interest, and intelligent provision for the nation is now emerging.

**State Paternalism.** Many persons feel that the government should not interfere in the conduct of business. Others feel that the government should exercise a fatherly spirit and protect the workers against exploitation and abuse. Hence in this country today, we find advocated two distinct policies on the part of the government toward the textile industries, etc.: (1) the policy of *laissez faire* (let alone) on the part of the state or nation; (2) the policy of protection — state or national paternalism.

As a rule there is a general feeling on the part of thoughtful citizens against the interference of government. This feeling can be overcome only by strong evidence that there is need for action. Individuals guard their rights jealously, and there is a feeling that individual freedom is constantly in danger. Then again, there is also danger that the tasks of government may become so great and burdensome that any increase may tend to destroy its efficiency.

Many sincere citizens and statesmen are constantly asking for state and national aid for education and other forms of community activities. In return for this aid, the state and national governments demand more or less supervision. The policy of state and national supervision may appeal to some minds because of the immediate effects of the aid, but a careful investigation will show that a certain danger comes when the granting of financial aid becomes a fixed policy.

The majority of citizens will agree on the following general principle: that the state should protect the individual in all economic matters that effect support and continuance of life. This means the right (1) to protect private ownership, (2) to protect contracts for laborers, (3) to prevent exorbitant prices for the necessities of life, (4) to protect workmen from dangerous labor, and (5) to protect society from danger to good morals, religion, and family welfare.

**Social Control.** In order to carry out the aims of society — the development of the home, industry, and government — it is necessary for all of us to agree to abide by the rules emanating from an invisible power called social control or public opinion. The success of society, industry, and government depends on how well we obey. It may be the law that compels us to obey, in some cases, but the feeling that we may lose our job and be ridiculed or shunned by our fellowmen is a stronger force. Respect is the feeling that we wish our fellowmen to have for us, therefore we tend to govern our actions in a way that will compel this respect and approval.

Because some of the members of society have not received proper training and do not have respect for laws and the observance of the rights of other members of society, certain penalties are exacted for the commission of misdemeanors or crimes. The penalty is placed before the members of society in order to develop the instinct of fear, which in many cases is sufficient for the prevention of crime.

However, there are many persons who think they can break the laws of society and escape detection. In other words, the selfishness of the individual is above the fear instinct. Society inflicts a penalty on the guilty individual as a punishment to him and a warning to others.

**Religious Influences.** The spirit of religion has always been with mankind. We may say that there is really an instinct to worship. Some theory was always invented among the savages to explain the unknown — some way to associate a conscious spirit with all animate and inanimate things that surrounded them. Each tree and animal had a spirit soul, according to the belief of the heathen. As civilization advanced these beliefs were enriched and made fuller. Religion has become a social force in regulating behavior; in fact, it is the strongest social force. In addition, religion has entered into the most important activities of the people. To illustrate: The silk industry in ancient China was considered so vital to the prosperity of society as to be interconnected with various religious rites.

**Moral Code.** Among all people, even the uncivilized, there are certain acts and practices that are forbidden, and certain penalties are imposed on persons who commit these forbidden acts. These

customs constitute the moral code and represent the results of years of experience. The power of this moral code to exact obedience has been acquired through imitation and the formation of habits during early life, reinforced in many cases by compulsion through fear of punishment. In fact, to this day, fear is one of the principal motives of obedience.

Since the moral code is based upon experiences of the race, and since these experiences differ in different countries, because of religious, social, economic, and geographical conditions, it follows that the moral code will differ in different countries and at different periods of civilization and industrial progress. The tendency is for a code of morals to be adopted that is best for the majority of the people in a certain period of civilization and industrial conditions. We know today that (*a*) self-control, (*b*) thrift, (*c*) respect for others, and (*d*) diligence are part of a moral code that is necessary in this age of industry. The test of a moral code is the way it functions over a long period of time. Hence our moral code is adapted for daily life and business (ethical standards of business or business ethics) and represents the experiences of the best minds, and therefore should be always respected and followed.

We are very sensitive to the opinions of the members of our group in society. This instinctive sensitiveness to the approval and disapproval of one's social group, or his friends and neighbors, is a basic characteristic of human nature and has great influence in forming our individual codes of morals and our standards of dress.

**Code of Ethics.** The success or efficiency of any society depends, in a large measure, on the practices, conduct, and spirit of its members with reference to right and wrong, and to their obligations or duty. The experience of the race shows that it is necessary to have a standard of conduct and established practices for men to live together peaceably. Most people instinctively conform to the standard of ethics adopted by the majority. We may say that we are instinctively honest. "The impulse to honesty is the greatest force in the conduct of American business." The impulse to fairness is also instinctive, but in the rough and tumble world of competition, in the basic struggle for existence, and in the exercise of the instinct of acquisition, human nature too often yields to temptation.

There are grave abuses on the part of that small fringe which lingers on the borderline of legitimate business that attempts to defraud; it is revealed in the intensity of the serious thrusts at each other by competitors who believe that the end justifies the means. No business or company, however, can ever win on a platform of unsportsmanlike conduct. Temporarily it may advance, but ultimately it must be vanquished. The public opinion of the business world each day grows more powerful just as the public opinion of a consuming public will eventually aid in bringing to terms the merchant who engages in sharp practices.

If business associations should serve as trade organizations and the Better Business Bureau idea should develop a better attitude between buyer and seller, based upon a desire to apply the rules of fairness which business collectively may adopt for itself, we should be lifting from the back of government, federal and state, some of the burdens that now weigh it down.

**Need of Authority.** No human society can exist efficiently without authority. It is the most important element in every society. It is the right of the community to direct and compel the individual members to live in accord with the specific aim or purpose of the society. The right of authority is derived from the duty of the community, as such, to accomplish its specific purpose. This, in turn, arises from the bond or agreement by which a number of persons are formally made or constituted into a society or community. Since society exists to carry out a definite purpose, it follows that it is the duty of each individual member to further or develop its specific aim. Therefore, every society has the right as its first essential function to enforce this duty. This right is called the right of authority. The history of the race shows that no society has ever existed successfully without authority. Since authority has always existed, it must be a dictate of nature and an absolute necessity in every society.

The agreement or constitution of the society determines how the authority shall be vested. The ruling power in which it is vested is called government and may be a single person, group of persons, or the whole community.

**Common and Statute Law.** Society has framed many of its rules for the regulation of its members in the form of laws. The

two great classes of law in this country are spoken of as (1) common law and (2) statute law. The common law is that put forth and explained by the courts in the many decisions of the past. The statute law is the body of positive regulations formulated by the legislatures of the states and by Congress.

Much of our common law represents the customs of primitive communities of the Anglo-Saxon or Celtic races from which our English ancestry developed. Although other races or nations took part in the early colonization of this country, their systems of law gave way before, or were rapidly assimilated to, the common law brought by the English colonists. Substantially all the branches of the common law pertaining to business have been the growth of the last two centuries. The law prior to the last two centuries, that is, from the time of the Norman Conquest, was the feudal law, which was a gigantic system of real estate ownership, extending from the sovereign to the subject. In those days commerce was slender, exposed to piracy, etc.

Today some unscrupulous business men frequently set fire to their business establishments so as to burn or damage their goods or wearing apparel and secure insurance on the damaged goods. Both common and statute law provide imprisonment for those found guilty of such an act.

Unsuccessful business men frequently turn over to their relatives large cash deposits and then petition the court to declare bankruptcy. The common law provides a prison penalty for those found guilty of such an act. These two practices are very common in the clothing industry, and have been considered unfair practices in the trade.

**Business Ethics.** Certain standards of business have been adopted by groups of business men which will benefit the majority of those engaged in that industry, but not necessarily those in the community or society as a whole. To illustrate: Merchants have been known to cancel orders for wearing apparel when prices have dropped. Such a policy may help the merchant temporarily, but it is a disadvantage to society as a whole. It is clear that such a standard of ethics is not correct. There is only one standard of ethics that has withstood the test of time — "Love thy neighbor as thyself." This can be expressed in the Golden Rule, "Do unto

others as you would have them do unto you," or in the language of the sidewalk merchant, "Give every one a square deal." Unfair business practices may help the merchant temporarily, but in the long run these practices are harmful to both the merchant and society in general. Each trade organization now adopts a code of ethics for that trade. Because of the weaknesses of human nature, the codes are violated by many traders in times of depression.

The following illustrates the code of ethics adopted by the Silk Association of America with regard to the buying and selling of silk waste :

The Board of Managers of The Silk Association of America, Inc., on request, approves the following Domestic Raw Silk Waste Rules recommended by the Committee on Specifications Covering Domestic Raw Silk Waste, to govern transactions between buyers and sellers in the absence of express agreements to the contrary.

Nothing in the following specifications shall be construed as waiving the right in individual transactions to make any special contrary agreement, but the specifications shall govern in cases where no such special contract exists.

Domestic waste is defined as waste produced in the process of manipulating raw silk as distinguished from waste produced by the reeling filatures. (Tussah waste not included.) Deliveries must conform to the requirements of these specifications.

*Classification.* Long waste consists of waste commercially free from fibers of less than six (6) inches in length.

Short waste consists of waste containing open fibers of less than six (6) inches in length.

The burden of segregating short waste from long waste is with the supplier, and deliveries of long waste not conforming to these specifications as to length of fiber may be paid for as short waste or returned at option of seller.

*Color.* Colors of tinted waste must be fugitive: that is, any color other than the natural color of the silk must disappear completely when the waste is given two boiling operations of filtered water containing one (1) per cent of olive oil soap, the weight of the solution in proportion to the weight of the silk being in the ratio of 50 to 1. The coloring matter used must also be such that it will not be fixed by the application of acid.

*Boil-off.* The boil-off, determined by the standard method applied to raw and thrown silk, shall not be greater than 27 per cent of the con-

ditioned weight of the waste as delivered. The value of any excess beyond the 27 per cent shall be deductible from the seller's invoice.

*Twist.* Deliveries must be free from hard twist; that is, none of the fibers shall be twisted together with more than sixteen (16) turns of twist per inch, basis of two-thread  $\frac{1}{16}$  denier raw silk.

*Knots.* Deliveries must be free from weaver's and warper's heading knots, unstrung cop and spindle waste, and warp splicings.

*Foreign Matter.* Deliveries must be commercially free from foreign matter of any description, including cotton, rayon, straw, excessive amount of oil, pieces of metal, etc.

*Weight.* Deliveries of domestic waste shall be on the basis of conditioned weight: that is, absolute dry weight plus eleven (11) per cent. In cases of dispute, the conditioned weight of the lot shall be established by the United States Testing Company, Inc., whose report shall be accepted by both buyer and seller and its cost borne by the party in error.

*Deliveries.* The acceptance of shipment by a railroad or other common carrier shall constitute a delivery. Each delivery shall be considered a separate sale.

*Rejections.* The buyer must promptly inspect and test waste upon receipt and promptly notify seller of intention to reject any lot not conforming with contract specifications. The buyer shall pay for waste used in making tests and where the right to reject has been established may return partial bales from which samples have been extracted.

Where any domestic waste is rejected for proper cause, the matter shall be submitted to arbitration unless the parties can arrange for a replacement or cash allowance or make some other adjustment satisfactory to both parties.

*Terms.* Prices are f. o. b. seller's shipping point, payment net 10 days after receipt of shipment, free of exchange, in U. S. currency or its equivalent at the office of the seller. Where shipment has been delayed, lost, or destroyed in transit, 80 per cent of invoice (to which bill of lading must be attached) shall be paid; 20 per cent shall be paid promptly after receipt of shipment with allowance for reasonable time for inspection; unless shipment is lost or destroyed in transit, in which case this balance of 20 per cent shall be paid in 30 days from date of invoice. Partial or complete payment of invoice in advance of inspection and determination of quality shall not relieve seller of his obligation to deliver in accordance with contract specifications.

*Arbitration.* All disputes must be arbitrated in accordance with the arbitration procedure of The Silk Association of America, Inc.

**Social Development of the Clothing Industry in the United States.** The success and efficiency of the manufacture of wearing apparel is due in no small degree to the character of the labor employed. During the industrial development of the United States the type of labor engaged in the clothing trade has changed many times. With the exception of the South, the development of the textile and clothing industries has caused remarkable social changes in the sections in which they are located. At first the mill-workers were almost all descendants of native-born Americans, and often were the neighbors and friends of the owners. They were usually of English descent, whose ancestors were trained in textiles. In the thirteen original colonies the English were the dominant race. They greatly outnumbered every other nationality and put their particular stamp on the civilization, determining not only the language but also the form of government.

When the nation came into being in 1789, the proportions of the various white strains, as indicated by the returns of the first census of 1790, were about as follows: Of the 3,172,444 whites, the English and Welsh constituted 82.1 per cent; the Scotch, 7.0 per cent; the Irish, 1.9 per cent; the Dutch, 2.5 per cent; the Germans, 5.6 per cent; the French, 0.6 per cent; the Swedish and others, 0.3 per cent. With respect to color, 80.7 per cent were white, and 19.3 per cent were colored.

The total population increased from less than 4,000,000 in 1790 to more than 9,500,000 in 1820. This means that the population increased more than 133 per cent in three decades. Conditions of life were extremely favorable. Birth rates were probably close to the maximum and death rates, on the whole, moderate. As industry developed, calling for more laborers, Irish and French Canadians came in, and with their cheaper labor took the places of the native born.

**Irish Immigrants.** In 1820 the great Irish migration to this country began. Some 50,000 emigrated to the United States during the decade from 1820 to 1830, followed by more than 200,000 during the next ten years. The country had begun to expand industrially. Because the immigrants, largely from southern Ireland, were mostly laborers, they were at first heartily

welcomed. Had it not been for the Irish influx at this period the construction of our canals and railroads would have presented very great difficulties.

In 1845 the Irish famine occurred, and this led to a great wave of migration to the United States. During the decade beginning in 1840, nearly 800,000 Irish migrated to America, and in the following decade the number exceeded 900,000. These immigrants located primarily on the eastern seaboard in New York, Boston, and other Massachusetts cities, and soon constituted one of the major elements in the growing population. They became the mill-workers in the textile centers.

**The German Settlers.** At about this time, 1848, there started an almost equally important mass migration of Germans, which resulted from the political upheavals in the German states. Their influx reached a maximum of 215,000 in 1845, and their total for the decade 1850 to 1860 was more than 950,000.

These immigrants were of a superior type. They were intelligent, educated, and self-reliant, and soon made their influence felt wherever they settled. They were not driven from their mother country by the pressure of economic conditions. With them, as with the original colonists, it was largely a matter of liberty of conscience and a desire to establish themselves in the new land where democratic institutions prevailed. They did not all settle in the large cities; many pioneered into the open western areas, settling along the Ohio and Mississippi valleys, forming large, progressive, and prosperous communities at Cincinnati, St. Louis, and other places. From the very beginning they enriched our professional and industrial life, particularly the textile industry, with chemists, dyers, and inventors of textile machinery.

There was a sharp falling off of immigration during the Civil War. But afterward it revived, attaining in the single year 1882 a peak of nearly 789,000. That year was a landmark in the annals of American immigration. It witnessed the crest of the German wave as well as that of the Scandinavians, who were attracted to the broad, fertile farmlands of the North Central States shortly after the close of the War. In that year, also, the first Chinese Exclusion Act was passed and the first inclusive federal immigration law was enacted.

Up to this point the bulk of the arrivals were from Great Britain, Ireland, Germany, the Netherlands, and the Scandinavian countries. Throughout the first eight decades of the century the broad ethnic composition of the American population had not changed greatly through the accretion of the several racial groups. These several peoples looked very much alike. They spoke either English or an allied tongue. Their social institutions were similar, making their assimilation into the flesh and blood of the new country relatively easy.

In 1890 the foreign stock — that is, the sum of the foreign-born and first-generation natives — constituted nearly 21,000,000, or 32.8 per cent of the total population. As we might expect, the British, Irish, and Germans constituted nearly 70 per cent of the total foreign stock.

**Progressive Changes.** The development of the mills required more capital. This required the sale of more stock, which naturally went to outsiders — resulting gradually in absentee ownership. The employees and stock owners became strangers to one another, and the fine cordial relations between mill owners and workers that existed in the early development of the textile industry disappeared. Many labor troubles due to misunderstandings arose and caused much suffering among the laborers.

Due to the great development of the textile industries there was a demand for more labor. Automatic machinery was invented which caused much discontent regarding labor and wage conditions because of disputes with the absentee owners. The latter made an effort to eliminate many of the English and Irish workers and to replace them with workers from countries having a lower standard of living. Since the wage standards are lower in Italy, Syria, etc., because of the habits and customs of the people, there was a tendency for manufacturers to encourage people from such countries to emigrate to America and seek work in the textile mills.

Thus the Irish were gradually driven out by immigrants from Poland, Russia, Bohemia, and Syria, who were unfamiliar with American standards of living and were content with very low wages. These later immigrants were largely of an agricultural class and did not contribute by inventiveness and applied science

to the development of the textile industry to the same extent as the English, Irish, French, Swiss, and Germans.

Serious problems of many kinds — social, political, and economic — resulted from the inability of most communities to assimilate the deluge of new arrivals. There crystallized a general public opinion to the effect that the new immigration was on the whole a mistake and constituted more or less of a menace to our type of civilization. The result of several legislative efforts was the Immigration Law of 1924, which limited the annual number of newcomers. Later, in 1929, the national origins provision of the Act limited the immigration under the quota to 153,000 annually. The immediate effect of this law was radically to restrict the flow of immigration from eastern and southern Europe.

Today, immigration to the United States has virtually ceased, the number of those leaving the country being greater than those entering. The migration era has been brought to a definite close.

Each country has made a contribution to the development of American industry, either in the agricultural, manufacturing, artistic, scientific, or business life. To illustrate: The Jews have contributed to trade and banking, and the Teutonic races to machinery and applied science. The French and Japanese have such a high artistic sense that their products are works of art.

The English and Americans have intensely practical minds and constantly emphasize usefulness, convenience, speed, economy of production, and not beauty, because they feel that the usefulness of producer goods depends upon efficiency in the industrial stages of the production of the commodities.

The Germans with their patience and mechanical ability have contributed much to the manufacture of dye-stuffs, finishing machinery, etc.

**Effects of Mixed Population.** The textile mills and factories in other countries have a purely native working population with the same racial traditions, points of view, and standards of living. Therefore the factories and mills in the United States are at a disadvantage. To illustrate: At present one of the best organized mills with 4000 employees has more than fifteen nationalities represented in the working force. The approximate distribution by racial groups is shown in the following table:

American.....	46 per cent
Irish.....	18 per cent
Italian.....	9 per cent
German and Austrian.....	6 per cent
Swedish.....	5 per cent
Polish.....	4 per cent
All others (chiefly English, Scotch, French, Russian, Swiss, and Canadian).....	12 per cent

Of the office force, 86 per cent are American, 9 per cent are Irish, and the balance chiefly Scotch and English.

The distribution of the working force by nativity is as follows :

American born of American parentage.....	13 per cent
American born of foreign parentage.....	33 per cent
Foreign born of foreign parentage.....	54 per cent

For the clerical force these percentages are 22 per cent, 64 per cent, and 14 per cent.

Approximately 60 per cent of the total personnel are men. Of these, 68 per cent are married, 29 per cent are single, and 3 per cent are separated from their wives by death or divorce or for other reasons. Of the women, who constitute 40 per cent of the total working force, 60 per cent are single, 35 per cent are married, and 5 per cent are widowed, separated, or divorced.

The age distribution of workers in the entire force is approximately as follows :

16 to 20 years.....	11 per cent
21 to 30 years.....	29 per cent
31 to 40 years.....	28 per cent
41 to 50 years.....	17 per cent
51 to 60 years.....	10 per cent
61 to 70 years.....	4 per cent
All other ages.....	1 per cent

Age distribution by sex shows that approximately 41 per cent of the women and only 16 per cent of the men are under twenty-five years of age, while 13 per cent of the women and 26 per cent of the men are over forty-five years of age. The average of men office-workers is thirty-one and that of women office-workers

twenty-eight years. Age distribution by sex in the office group is approximately as follows :

Age	Men	Women
16 to 25 years.....	28 per cent.....	45 per cent
25 to 35 years.....	42 per cent.....	33 per cent
35 to 40 years.....	23 per cent.....	16 per cent
40 to 50 years.....	4 per cent.....	3 per cent
Over 50.....	3 per cent.....	3 per cent

The average length of service of men employees is 13.9 years, and women, 9.5 years. Twenty-three per cent of the men employees and 13 per cent of the women have had 20 years or more of service, an unusually high proportion of long-service employees. Fifty-three per cent of the men and 34 per cent of the women have been with the company for ten years or more, and 77 per cent of the men and 61 per cent of the women have been there for five or more years of service.

**A Present Problem.** The development of new machines for making wearing apparel and new methods of preparing raw and semi-raw materials for this purpose have continued at a rapid rate during the last century, particularly during the last decade or two. These new devices and methods have constantly displaced workers. While years ago these displaced workers found new employment in newly created fields of endeavor, the increase has been so large of late that other fields have been unable to absorb them. Hence there are more people unemployed in the wearing apparel trades than there are positions, and other fields can not take care of the unemployed. The problem of taking care of these idle employees is one of the pressing ones of the time.

Since industry exists for society and society must provide work for its members, it becomes necessary to rearrange industrial methods so that all workers may find employment. This can be done by distributing the work so that each worker will be employed five instead of six days and if each day be reduced in length to six or seven hours, with no night work. This readjustment will give workers more leisure for their betterment.

**The Malthusian Theory.** A study of the growth of nations shows that the population tends to increase in geometrical ratio, while the food supply increases in arithmetical ratio, and unless

the increased population is cut down by famine, wars, or the lowering of the birth rate, there comes a time when the country can not produce the food supply necessary for the increased population. This is true in Italy, Japan, etc., where every year hundreds of thousands must migrate to other fields. Of course new means of food supply, utilization of farms, and conservation of natural resources may tend to provide greater food supply, but nevertheless a rapid increase in population means that eventually new land must be secured for the excess population.

A political economist named Malthus defended this theory that the population tends to increase more rapidly than the food supply. His conclusion was based upon the following observations: (1) the population increases in a geometrical ratio; (2) the law of diminishing returns applies to the soil; that is, the return from the soil (the food supply) increases less rapidly than the number of workers on the soil. To illustrate: If nine men are placed to work on a given area of land the return (food supply) will not be nine times as much as the food supply when one man tills the same area. This theory is called the law of diminishing returns.

Of course, it is necessary to remember that the earth is limited in area, and that Nature's resources, however plentiful, are not boundless. Certain sections, even, may have reached population saturation, a condition that if true will usually be found attributable to poor government, backward agriculture, and other causes, rather than to a poverty of natural resources. But there is no evidence in this country that the soil from which man derives his sustenance is groaning under its human load. Increase in population during recent decades has been rapid, but the world's food production has been increasing at a still more rapid rate. The Year Books of the United States Department of Agriculture tell us that whereas food staples, such as wheat, oats, etc., increased between 40 and 50 per cent from 1895 to 1912, the increase of population for the same period was only a trifle over 25 per cent. Many people today have a vague feeling that the means of subsistence are less abundant than formerly. But this idea is due chiefly to the higher cost of life's necessities, caused primarily by the rapid rise in the cost of marketing and not by a decrease in the world's food production.

**Overpopulation in the Future.** But what of the future? Is there danger of overpopulation? Experts show us that the earth, cultivated by ordinary agricultural methods, could support more than sixteen times its present population. This figure could be indefinitely increased by intensive cultivation and by the progress of inventions. We must remember that "Necessity is the mother of invention." The problem must arise before mankind will solve it. The danger of overpopulation, however, with which the Malthusians would frighten us, is not as serious as it would seem on first thought.

**Underpopulation.** If there is anything to fear, it is the danger of underpopulation. Confining our attention to the United States under the existing death rate, it requires an average of close to four children per family to keep the population stationary.

A high birth rate does not imply a high death rate according to the Malthusians. To illustrate: In England and Wales, a low birth rate coëxists with high infant mortality; whereas, in Ireland the reverse is true. There they have a high birth rate and a low infant mortality. Reliable data show that with due allowance for cases of extreme poverty, with good care and nursing and with proper spacing between births, it has been found that the mothers who raised the largest number of children were those that lived the longest. The French Canadians have very large families and live to a good old age.

In order to have well-developed families, — the normal unit of society and community life, — it is necessary to see that the father has a living wage that will support a good-sized family in a frugal manner.

Very careful calculations in the year 1932 show that it costs \$9000 for a family with an income of \$2500 to rear a city child from birth to 18 years of age. This high cost of rearing children in the cities is now worrying economists as well as urban parents.

The trend to a stationary or decreasing population is manifest not only in the United States but almost everywhere in the Occident. It has been predicted that America will have a stationary population in 1960.

Dr. Oliver E. Baker, economist of the Department of Agriculture, whose special study is the relation of population to land utilization,

says the decline is definitely associated with industrial development and city life. As the chief reason for the relative scarcity of children in the cities he cites the recent survey mentioned above, which was made by an insurance company. "It requires about three children a family to maintain even a stationary population, and it appears that for a typical American urban family to raise three children it will cost \$25,000 to \$30,000," he said.

Dr. Baker points out that urban conditions of living very often are not favorable to family life. In the urban industrial system there is little place for the child. In many cases the individual, not the family, is the economic unit.

On the other hand, not only can the child be raised more cheaply on the farm, but in most cases he is an economic unit from the age of ten years onward.

**Birth Rate in the United States.** Reliable figures indicate that there were about 150,000 fewer births in 1931 than in 1930. The decline of births in a year of economic depression was apparently two to three times as large as the average annual decline during the preceding decade of urban prosperity. Some hope of retarding, if not stopping, the decline is afforded by the movement of professional and business men and of factory workers to suburban places and small farms. The prospect, at present, is for an increase of this movement, but as yet the influence on the birth rate is not large.

**Vocational Industrial Education** may be justified on the grounds that a democracy means equal opportunities for all, that every one within reasonable bounds of age, health, and strength should be engaged in a useful occupation, that is, all persons of both sexes not incapacitated or in school should be working. Practically 85 per cent of the present workers — those who work for pay — are engaged in producing concrete material; of the remaining 15 per cent about 5 per cent are engaged in professional service; the other 10 per cent are engaged in various forms of personal service. Life and health, and to a large extent discipline and character, must be derived from employment in the industrial and commercial fields. Any large number of men and women without training for some definite occupation, and not able to be producers, are apt to become a heavy burden on society, and often form a discontented class that threatens the existence of our government. Society

must provide means and training for the proper distribution of human talent, in order that every member may be assured of a living wage or salary.

The efficiency of society means the welfare of the group, which can be best accomplished by (1) strong and reliable government

BECAUSE OF GREATER EXPENSE OF  
REARING CHILDREN, FAMILIES ARE  
SMALLER in CITIES THAN in RURAL AREAS.

*For example:*

AVERAGE SIZE OF FAMILIES—

NORTH CAROLINA  
(Largely rural)

NEW YORK  
(Largely urban)

1910	5
1920	5
1930	4.9

1910	4.5
1920	4.3
1930	4

AVERAGE SIZE OF  
FAMILIES FOR U.S.

1910	4.5
1920	4.3
1930	4.1

Thus the movement of  
Population to Cities is  
lowering U.S. Birth Rate.

CHART SHOWING HOW AMERICA’S FAMILIES ARE GROWING SMALLER

service, (2) laws that are just to all, (3) opportunity for each to develop to the best of his ability, (4) efficient organization of the group — loyal workers with proper leadership, (5) each allowed a chance to select a vocation that offers opportunity for service and advancement, (6) a training for the vocation that will prepare him for the development of his highest ability either as worker or leader, (7) each individual to be allowed to enjoy the companionship of his friends and family, and to be contented.

The study of the economics of clothing has a distinct ethical value because it broadens one's sympathies so he can see the relation between the workers, the employees, and the consumers, and can see better how each class can be rendered happier and more efficient.

A nation is making economic progress if the labor of its citizens produces greater wealth. This may be due to (1) new inventions — machinery or processes, (2) better living conditions and higher standards of life, which improve their health and give them greater ability, or (3) better training of workers through vocational education and the teaching of better organization to leaders.

### QUESTIONS

1. What is the relationship between sociology and clothing?
2. What effect has immigration on social conditions?
3. How has the depression "socialized" economic thought?
4. Members of society in all countries have realized the value of attractive dress. How has this been illustrated in certain countries?
5. How has the caste system affected dress? What effect has that idea had on jobs in this country?
6. How do the fan and the handkerchief illustrate social changes?
7. What has culture mass to do with one's choice of clothing? Name contributions made by various countries.
8. Some consider the wearing of clothes the result of climatic conditions. Is this wholly true?
9. How did the word wife originate? Spinster?
10. Civilization has overcome primitive inertia. Illustrate from the clothing industry.
11. Modern communication has standardized clothing. Explain.
12. Account for the "sweat shop" practice.
13. Trace the development of the clothing industry in the United States, noting the effect that labor has had on the industry.
14. How can society meet the problem of the unemployed who have been thrown out of work by machines?
15. Criticize Malthus' theory. How may this problem be met?

## CHAPTER IV

### CONSUMPTION OF CLOTHING AND TEXTILES

**Definitions.** The process of wearing out an article of clothing, or "robbing" it of its usefulness, is called the *consumption* of the article. Thus the total consumption of clothing by society is measured by the quantity of wearing apparel used. The process of consumption may be considered from two points of view: (1) the wearing out of a silk shirt is an example of *final consumption* because the silk can not be used again for clothing; (2) the utilization of a worsted suiting into shoddy to be used for remanufactured wool is an example of *partial consumption*. In the latter case the wool will be used again. In other words, consumption is the wearing out of an article for the satisfying of a human need.

*Waste* is an economic term used to indicate the destruction of the utility of an article without satisfaction to the consumer and without assisting in the production of other goods. Thus the loss of a wool suit through fire would be considered economic waste.

**Importance.** The consumption of textiles is very important to the individual because of the large amount of one's earnings (10 per cent to 25 per cent) often spent on clothing and textile house-furnishings. A saving of 9 per cent or more means that this sum may be used for savings and other purposes. In order to be economical in this respect, it is necessary for the consumer to know how to select and to buy different kinds and qualities of textiles, how to recognize the ones best adapted to his use, and how to obtain the greatest service from the fabrics and wearing apparel purchased.

**Economics for the Consumer.** In order to avoid waste, particularly in wearing apparel, we must have efficiency in production and exchange as well as the proper selection, purchasing, and

conservation of clothing. Great emphasis has been placed on production, and to some degree on exchange (marketing), but little if any emphasis has been placed on the proper kind of clothing for the individual, for various purposes such as climatic, social, or economic, at reasonable prices, or on the ability of the consumer to conserve the clothing purchased.

A study of the economics of clothing should be part of every one's education, particularly that of girls and women, who are the spenders of income, especially for clothing. Economics of clothing should include a study of: (1) the amount to be spent for clothing; (2) the proper selection of clothing, which in turn involves a knowledge of textiles and the elements that make clothing beautiful — lines, color, artistic value of the human form, style, and fashion; (3) how to judge values and to buy clothing; (4) the conservation of clothing; and (5) the need of coöperation between consumer, exchange agent, and producer in order to meet effectively the needs of the public with regard to clothing.

Wasteful consumption means the production of luxuries to satisfy the whims or fancies of certain people. Such consumption causes a reduction in the production of the necessities of clothing.

**Utility of Clothing.** In Chapter I we found that a demand for clothing or wearing apparel is a human want plus the ability and willingness to pay the price. The clothing, wearing apparel, or other commodity or service that satisfies the want is called a *utility*. In the popular sense, utility may mean something useful, but in strict economic use it is the power to satisfy a definite want. Consumption is destruction of these utilities in order to satisfy wants. To illustrate: When a person has worn threadbare a silk blouse, she has enjoyed the elementary, form, time, place, quantitative, and possession utilities in the silk blouse, and at the same time destroyed them.

The economic life of a commodity is the time it retains its utility and therefore is in demand. The economic life of an overcoat begins in the late fall and winter, hence the price is lowered in March or April, when the economic life is nearly or completely over. The economic life of a particular overcoat may be extended over two or three winters, of course, but it has no utility during the intervening summer months.

**Marginal Utility of Clothing.** In order to understand the forces that determine the price of wearing apparel, it is necessary to consider the elements that make up the value of clothing.

Marginal utility, we learned, is the utility of a single unit — a single skirt or a single suit — as determined by the amount of the supply at hand. If a person has twenty suits of clothes, the marginal utility of the last suit would be much less than if he had only two suits of clothes. When the number of suits far exceeds any possible needs of a consumer, the last suit possesses no marginal utility whatever.

The utility of an article like a silk shirt is often called subjective, because its value is largely dependent on the amount of satisfaction it will give the consumer rather than on the amount of wear he can obtain from it. The consumer will not pay more for the silk shirt than its subjective value to him, hence that value is the maximum exchange value of the shirt.

Consumers may be divided into at least three classes: the wealthy, the middle class, and the poor. The wealthy value money less than the other two classes and hence are willing to pay a little more for the same article — such as shoes. The number of pairs of shoes they will buy will depend more upon their tastes than upon the price of the shoes. Unlike the middle class and poorer class purchasers, they will not buy more shoes because the supply increases and the prices are slightly lower.

Thus we find that each community pays for certain articles according to its ability. Articles of wearing apparel, like handkerchiefs or dress accessories, may sell for 10 cents in a small community. Wearing apparel or dress accessories to serve the same purpose might sell for \$1.00 in a wealthier community. In other words, the richer the community the higher will be the price of the monopolized wearing apparel or dress accessory.

**Marginal Consumer.** The consumer who is least anxious to buy a commodity, either because he has not the desire or because his purchasing power is low, is called the marginal consumer. He is constantly looking for a low price; if the price of a silk dress goes up, he will look for a cheaper substitute. As the price of the silk dress goes up he is no longer a marginal consumer. Some one else who is willing to pay the additional price becomes the marginal

consumer. On the other hand, if the price of the silk dress went down, another marginal consumer would appear. Thus we have a marginal consumer for each price. Any change in the price changes the quality and rank of the marginal consumer.

Hence a change in the price of wearing apparel or any other commodity will naturally bring about a change in the demand for it. Lowering the price of silk dresses brings in another group of customers. An increase in price excludes a group of customers. Lowering the price should thus increase the sales.

The marginal consumer is an important factor in the selling of wearing apparel or any other commodity. It is the group to which the advertising is expected to appeal. A good advertisement should hold the marginal consumer at the existing price, and also appeal to those just below the marginal consumer class who appear indifferent.

**Marginal Producer.** While the demand for clothing and wearing apparel comes from the consumer, one would naturally suppose that he might be in complete control of the price. But the consumer has strong desires for wearing apparel and seeks to satisfy them. The producer of wearing apparel knows the existence of these desires of the consumers and produces the apparel and charges a price that will give him a satisfactory return for the materials, labor, services, etc.

Since the cost of producing wearing apparel differs among producers according to the management and efficiency of the factories, it follows that the producer whose costs are lowest can sell at the lowest prices without loss. On the other hand, the producer whose costs are highest and who is yet able to sell his wearing apparel is the one who determines the market value or price. He is called the marginal producer, because he is on the edge or margin of production. He is the one who demands the highest price, because he is the one least anxious to sell.

Both the marginal consumer and marginal producer are important factors in the buying and selling. They constitute those great groups that argue with one another with regard to unfair trade prices. They are always looking for bargains, running from one store to another, comparing prices, accusing merchants of robbing the poor consumers. They are a constant annoyance to the peaceful arrangement of buying and selling wearing apparel.

**Consumer's Surplus.** We have already observed that the market price is the product of a number of forces and conflicting interests, chief of which are the marginal consumer and the cost of production. The price or exchange value of wearing apparel in the market tends to be the price that will attract the marginal consumer, and is not an average of the prices the various purchasers are willing to pay. There are always some consumers who would have bought the same article even if the price had been higher. Since it has not been necessary to pay this higher price they receive a certain surplus satisfaction called the consumer's surplus. To illustrate: A rich man and a poorer man purchase the same kind of a handkerchief. The poor man is the marginal consumer who would not have bought the handkerchief if its price had been raised. Its value to him, in terms of money, was exactly the price paid. The rich man, on the other hand, might have been willing to pay a considerably larger sum for the handkerchief. He valued his money less highly because of the amount he possessed, and would pay more for the gratification of his desire. In other words, the value of the handkerchief to him was greater than the value of the money paid for it. The difference between the two values is called the consumer's surplus.

**Price Groups in Clothing.** Textiles, including raw materials and raw cloth, as well as clothing and other wearing apparel, may be purchased at so-called "high prices," "lower prices," and "medium prices."

The expression "high-priced wearing apparel" is frequently misunderstood by many people. The difference between high, medium, and low-priced clothing is due to various values in material, workmanship, and service. In many if not most cases it is not a matter of one merchant charging a high price for the same quality that can be bought elsewhere for a low price and equal or better service.

High-priced wearing apparel should mean the finest in quality, and embodying many important items of cost in production that are essential to the standard or seal of excellence, such as (a) high quality of raw materials, (b) high grade workmanship or craftsmanship, (c) intelligent service, (d) business courtesies, and (e) confidence in the merchandise and the seller's manner of doing

business. These items are not demanded in the less expensive clothing when the people buying the article are able to discriminate between qualities. The purchaser should carefully analyze the quality and services of all wearing apparel and see why certain articles are above medium and low prices. Sometimes the high-grade or quality articles, though necessarily costing more, are in reality not as expensive as a cheaper grade at a lower price.

In the purchase of wearing apparel we may think of one or more of the following characteristics: (a) style, (b) quality, (c) workmanship or tailoring, (d) value, (e) price, (f) service.

Of course all consumers do not consider all of the above characteristics in the purchase of clothing. Some consumers look for the style, that is, the cut, line, color, etc., that is recommended by the costumers or manufacturers. They may look for style, regardless of quality, service, or workmanship. The group that demands style may be considered as (a) ultra, (b) exclusive, (c) popular, (d) conservative, (e) staple. The ultra group demands the newest and the most attractive, that is, really the extreme, and the one that will cause people to look at them as they pass by. The exclusive style is demanded by those who can afford to pay the highest price and who know that the style is not common but is used only by those of extreme wealth. The popular style is one that is in demand by most people. The style that has the least change from the previous season, that will not attract attention, is called conservative. A staple style is one that can always be worn, such as a broadcloth suit.

Quality refers to the best wearing apparel in both composition, finish, and workmanship. Quality clothing always stands out as superior, and of course costs the highest.

Tailoring or workmanship refers to the method of manufacture, the way the garment is put together by hand or machinery or both. Hand tailoring gives, in some cases, better results than machine work.

**Value.** Value refers to the qualities in wearing apparel that make it very desirable. The more desirable qualities it possesses, the greater the value. Every article of wearing apparel is made or designed carefully for a definite purpose. These qualities of design, called the specifications, indicate the value of the article.

The price is the value expressed in dollars and cents. To some people with limited income, price is a very important factor, in fact in some cases it is the most important factor.

Value has been defined as the combination of quality and price. The term can be applied equally as well to the cheaper articles as to the highest-priced items, but it has been often confused as meaning only a so-called high-grade product selling for a low price. A low-priced product may represent an excellent value when the materials and design have been carefully selected for their purpose and the proper workmanship added to complete a worthy article.

Service refers to the many things that are done to make the consumer feel at ease, such as comfort while shopping, quick delivery, as well as extending to the consumer easy terms of payment, etc.

**Wholesale and Retail.** The purchase of wearing apparel may be by wholesale or retail. The purchase by wholesale is in large quantities and involves greater knowledge of the wearing apparel than by retail. The prices of wearing apparel fluctuate from day to day, and the efficiency of the buyer depends upon his ability to secure the lowest price.

Purchase by retail is in small quantities to meet the immediate needs of the consumer. Consumers vary in their ability to buy. One may divide consumers into the following classes: (a) those who demand quality, style, and service without regard to price, (b) those that demand quality, style, and service at the lowest price, (c) those that demand quality and style regardless of service at the lowest price, (d) those that demand quality regardless of style, (e) those that demand style regardless of quality at the lowest price, (f) those that demand lowest price regardless of quality and style.

Since there are different types of consumers, there must be different types of business firms dealing in wearing apparel, each one appealing to certain types of consumers.

Some consumers demand service and quality, regardless of price. Other firms provide goods of the same quality at lower service and at lower prices. In addition, there are many firms that sell goods of varying quality at still lower prices. This last type of merchant appeals to the marginal consumer whose wants are less intensive

and who usually visits and inspects the wearing apparel of at least three stores, and compares the prices. That is the reason why one finds at least two or three retail dry goods stores in every city. Women shoppers demand the right to make comparisons of the prices of the same wearing apparel in two or three stores before they make a purchase.

**Need of Cheap Wearing Apparel.** Each article of wearing apparel gives not only a certain material satisfaction to its owner but also has a certain psychological value. Thus a fur coat not only keeps one warm but also affords a feeling of satisfaction in having it. There is a certain thrill received from wearing a Russian sable coat that one does not receive from any other style of coat, even though it may keep one's body just as warm.

A fur coat may be composed of (a) the best Russian sable, (b) a medium grade Russian sable, (c) low-grade pieces of Russian sable, (d) imitation Russian sable fur, or (e) cloth imitation Russian sable. These five grades of coats may be made to appear to the average person very similar but may vary in cost from \$250 to \$2000.

Some consumers are willing to pay the highest price for the genuine sable coat. There are others who are willing to purchase the imitation fur and will receive as much satisfaction from it as the first group of purchasers receive from the genuine sable. Consumers vary in taste and in discrimination. So long as they believe they are wearing a sable coat they receive the psychic value. It matters not where the coat has been purchased or the price paid for it. The more discriminating purchasers are insistent upon the genuine article and would receive no satisfaction from a cheap imitation.

Because of these differences in taste and in income, there are manufacturers ready to place on the market at least four different grades of each kind of wearing apparel. These different grades have distinct economic value because they make it possible to give satisfaction to people who are unable to pay the high price for the best quality — *i.e.*, the genuine sable coat — yet at the same time desire to have the thrill of thinking they are wearing a sable coat and of impressing their neighbors and friends by possessing one.

The same reasoning may be advanced for the manufacture of weighted silk fabrics. It permits people with limited income to have the satisfaction of wearing silk when they can not afford to purchase pure dye silk. In the same way one can explain the demand for cotton-backed silk linings, remanufactured wool overcoating, imitation silk hosiery, and silk hosiery with cotton tops and feet.

**Leather.** Imitation leather is used extensively in shoes and in accessories such as handbags, gloves, belts, etc. Genuine leather is obtained from the hides of animals or occasionally from fish skins. A cheaper product can be made by using imitation leather. Thus a relatively cheap leather may have the grain of a more expensive leather stamped on it. Pig skin may be imitated by embossing sheep skin, which is very cheap; glazed kid may be imitated by stamping the grain on a cheaper goat or sheep skin.

Pocket-books and handbags have been made available at very low prices by substituting cloth sized to the proper stiffness and then embossed with the grain of genuine leather.

**Jewelry.** Jewelry is an important part of the costume because of the satisfaction that it yields to the wearer, as well as because of its ornamental quality. Many men and women have a real love and passion for jewelry, either with or without precious stones. The precious metals used for jewelry are gold and platinum. Silver is used for jewelry in some countries. These metals are expensive and can be purchased very rarely and in but small quantities by the poor. Hence about the only real jewelry owned by them is something very highly prized, such as a wedding ring.

The same is true with regard to precious stones, such as diamonds, pearls, and rubies. Less expensive, but by no means cheap, are the semi-precious stones, such as turquoise, opal, moonstone, etc.

Jewelry changes in style rapidly, both as to material and settings. Gold is popular at one time, platinum at another. Brilliant finishes and stones may be fashionable at one period and dull effects at another period. Jewelry changes in shape, composition, color, luster, etc., to agree with the prevailing style of the rest of the costume. Since it has both style and social value, there is naturally a desire on the part of every one to possess more or less

jewelry. As most people can not afford the genuine metals and stones, we find many substitutes developed, such as alloys, quartz, glass colored and stained, etc. These appear on the market and may seem to the undiscriminating quite as valuable as the real article, and may yield just as much psychic satisfaction. Such imitation jewelry has a distinct economic value because it gives to those of limited means a satisfaction that is almost as profound as the satisfaction afforded the wealthy by their genuine jewelry.

**Normal Prices.** Prices may be considered as (a) normal, (b) inflated, or (c) deflated. They are considered normal when there is a maximum production and consumption, that is, full employment of equipment and labor and full consumption of the commodity, such as cotton. An inflated price of cotton would be due to a scarcity, with the demand exceeding the supply. The scarcity might be caused by poor crops due to ravages of insects or to unsatisfactory weather. A deflated price of cotton is due to an overabundance, such as existed in 1931, when the demand is limited and the full equipment and labor are not utilized. The normal price in a strict economic sense is the cost of production by the marginal producer, and is the market price. The market price may be inflated or deflated.

The United States government has attempted at different times to stabilize the price of cotton, and the Japanese government has attempted to stabilize the price of silk. Neither has been successful. The government may urge the banks to be liberal in extending credit to farmers and merchants and thus assist price stabilization to some degree, but specific attempts at control have not been effective. Temporary control as in 1933 has been used effectively to hasten the return of the country to normal condition and to eliminate unemployment and distress. Out of these experiences may come some form of government control.

**Variations in Price.** The price of clothing or any other article tends to fall when the supply is increased or when the demand for the article decreases. For example, at the beginning of a style season we pay more for clothing than at the end of the season, because the demand is greatest at the beginning and least at the end of the season. Hence "bargains," or clothing at reduced prices, are found at the middle or end of the season. The price we pay

for an article is called the initial price. The full price includes what the article has actually cost us for repairs, cleaning, etc., during its life. Therefore, in the purchase of this utility we must compare the different articles of clothing, considering not only the initial price, but approximating the total or final price.

Many people feel that extravagance in dress may be justified on the ground that it places money in circulation, thus giving other people employment. But in order to benefit the community, and therefore the individual, to the highest degree, money should be spent for the things that give the greatest return — the necessities or the important wants of man.

The consumer determines what kind of clothing or wearing apparel shall be made. The amount one spends on clothing is called the purchasing power of that consumer in clothing. Of course, the consumer may be educated to some extent by advertising in the daily paper and fashion magazine, or by skillful salesmanship on the part of the salesman or saleswoman and thus be made to increase his purchase of clothing.

**Customary Prices.** Consumers cultivate the habit of associating definite prices with certain necessities, like a spool of cotton, clothing, etc. Thus a spool of cotton is always associated with the price five cents. This usual or associated price is called the customary price, and because it has stood the test of time it is considered the proper price. Such prices do not vary quickly from season to season or with changes in demand.

When business slackens and a real depression sets in, as in 1930–1932, it is difficult to sell goods, particularly wearing apparel. Merchants in order to “move” their stock have “liquidation sales” and lower the price to cost and sometimes below cost. There are real bargains in the first liquidation sales. But as time goes on, the public desire lower prices and the standard manufacturer can not lower the price and produce standard quality. Hence a group of sub-standard manufacturers start producing wearing apparel, not up to a standard but at a lower price. This means wearing apparel of lower quality. While one may save some pennies on the lower price wearing apparel, it is not economical from the standpoint of service and satisfaction, fit and durability.

**Changes in Price Levels; Index Numbers.** Notice the prices of textiles such as cotton fabrics as listed in the daily trade papers, and note how the prices change from day to day and also during the same day.

General level prices are not stationary; they rise or fall, as the demand and supply operate inversely. These changes are indicated by index numbers. To illustrate: Assume that on a certain date, Jan. 1, 1931, the index number is 100 and on a *certain date later* the index number is 125. That means the price level has gone up, which in turn means that it takes more money to buy a given quantity of cotton or any other commodity. The purchasing power of money, so far as it is used for buying this commodity, has diminished.

On the other hand, if the index number on the later date is 93 instead of 125, it means that the price level has gone down, which in turn means that it takes less money to buy a given quantity of cotton or any other commodity — that the purchasing power of money has increased.

Thus we see that the price level and purchasing power vary in opposite directions. In order to compare prices of the same textiles or other commodities at different times, index prices have been arranged by various trade papers or organizations.

These indexes have been constructed on a straight arithmetic average. That is, the prices of a certain number of items of textiles and wearing apparel have been noted and the average price obtained for each. To illustrate: In selecting the index for raw silk, five Japanese and one Canton number have been selected and the daily prices noted each day for a week. Then the weekly average is obtained by adding the prices and dividing by six. In the case of fabrics such as cotton goods the prices of eighteen gray goods are noted for a week and the average obtained by adding all the prices of each and then dividing by six. Similar results are obtained in finished cotton goods by taking a finished item.

The raw wool index has been constructed on a somewhat similar basis, that is, on an arithmetic average. However, in view of the fact that raw wool is quoted in both grease and scoured state it was necessary to convert them into one classification. Therefore each item quoted in grease is converted into scoured, and then an

arithmetic average of the scoured items is taken. In the case of foreign wool the same practice has been applied as in the case of domestic wool; that is, of first converting the wool quoted in the grease into scoured levels. This relates particularly to South American wools. After converting each item to a scoured basis we then added 34 cents, the duty chargeable for an import of each pound of wool used for apparel purposes.

The Fairchild Composite Fibre Index, which is also published weekly, is a weighted aggregate of cotton, wool, silk, and rayon indexes. This index is a composite of the four fiber indexes. These various indexes, which are in reality average prices, have been converted to their pre-war base, 1911-13. For example, if the average cotton price for last week was 6 cents per pound, this would be 50 per cent of the pre-war level, which was 12 cents. The same procedure is applied to wool, silk, and rayon. After arriving at the relative indexes as compared with the pre-war, these relatives are multiplied by certain "weights" assigned. These weights are determined on the basis of the importance of each fiber to the total. For example, cotton has been assigned a weight of 33 per cent for 1931, wool 26, and silk and rayon the rest. These weights change from year to year. These various relatives are multiplied by these various weights, and then the total is added to give the composite index.

To illustrate: The Fairchild Retail Price Index is an index of retail prices of wearing apparel.

The index number on January 1, 1931 = 100.

	1932		1933		1934	
	<i>Feb. 1</i>	<i>July 1</i>	<i>Feb. 1</i>	<i>May 1</i>	<i>Jan. 2</i>	<i>Feb. 1</i>
<i>Composite Index</i> .....	81.3	75.1	71.1	69.4	88.0	88.5
Piece Goods.....	77.8	71.5	67.7	65.1	82.8	84.2
Men's Apparel.....	83.3	77.2	72.4	70.7	86.2	86.5
Women's Apparel.....	82.9	76.2	72.7	71.8	90.3	89.5
Infants' Wear.....	86.6	79.5	77.2	76.4	90.4	91.0
Home Furnishings.....	80.8	76.2	71.1	70.2	85.8	86.5
Piece Goods						
Silks.....	77.5	68.4	62.8	57.4	69.8	70.0
Woolens.....	78.9	74.0	70.4	69.2	81.7	81.9
Cotton wash goods.....	77.1	72.1	70.1	68.6	96.9	100.6
Domestics						
Sheets.....	78.0	71.8	67.5	65.0	92.6	93.9
Blankets and comfortables.....	81.2	77.2	74.0	72.9	91.8	93.1

	1932		1933		1934	
	<i>Feb. 1</i>	<i>July 1</i>	<i>Feb. 1</i>	<i>May 1</i>	<i>Jan. 2</i>	<i>Feb. 1</i>
Women's Apparel						
Hosiery .....	80.3	68.2	61.1	59.2	79.6	79.5
Aprons and house dresses .....	87.8	80.6	78.2	75.5	101.9	101.7
Corsets and brassières .....	91.0	87.4	84.1	83.6	96.1	96.2
Furs .....	74.5	66.5	66.5	66.8	92.0	88.2
Underwear .....	79.2	73.8	70.7	69.2	89.2	87.8
Shoes .....	84.5	81.0	77.4	76.5	83.1	83.3
Men's Apparel						
Hosiery .....	80.7	71.0	67.0	64.9	86.1	85.8
Underwear .....	80.0	73.7	70.7	69.6	92.9	93.2
Shirts and neckwear .....	85.2	79.5	77.1	74.3	90.0	90.3
Hats and caps .....	81.4	74.6	69.2	69.7	78.6	79.1
Clothing, including overalls ....	84.9	80.6	71.4	70.1	81.9	83.1
Shoes .....	87.7	83.6	79.3	76.3	88.1	87.9
Infants' Wear						
Socks .....	86.8	72.8	74.0	74.0	88.3	90.2
Underwear .....	87.1	80.0	74.6	74.3	92.2	91.9
Shoes .....	90.5	85.8	83.0	80.9	90.7	90.9

**Demand for Clothing.** Many persons may think that there is an overproduction of wearing apparel, and that the supply exceeds any reasonable demand that exists. Generally speaking, however, the world is still far below the saturation point in the supply of clothing. Many people have only a small fraction of the clothing goods and services that they could use to advantage. There may be an excess of certain kinds of clothing in certain sections, but there is not an excess of the various types. Even in Western civilization only a small fraction of the population can be said to be living on a luxury basis so far as clothing is concerned, and the vast majority are confined to the necessities. The clothing standards of millions of persons in the Orient are far below the reasonable standards that human beings have a right to expect.

Within the United States itself, where clothing is most abundant, the fulfillment of legitimate needs and desires for clothing of the average citizen would represent an expenditure of from three to five times the present budget. If American industry were called upon to supply even the minimum needs of the entire population, the present so-called overcapacity would be found inadequate.

The demand for clothing varies with the income, as well as with the desires or tastes of the individual. With a definite income to spend on wearing apparel, one consciously or unconsciously

weighs and balances one desire against another to determine which one to satisfy if there is not sufficient money to purchase both articles. Some persons will purchase any wearing apparel they desire, regardless of the price. Others will purchase only if they feel that the price is satisfactory. Thus we find that the price is frequently a governing factor in the selection of clothing.

Since the consumer buys a commodity to satisfy a need or desire, the price he is willing to pay for it is purely subjective in character. That is, the value to him is directly related to the amount of satisfaction he expects to get from it. For example, if he buys a pair of silk stockings, they have a value for him because they happen to meet his taste and needs. The value of the silk stockings to the producer is closely related to the cost of production, but this is not necessarily true of their value to the consumer. In the same way, the value of the stockings to the middleman or trader depends upon the demand and supply for silk hosiery and not upon any personal evaluation of their utility.

In apportioning income to be spent for clothing, an individual must attempt to secure wearing apparel to satisfy many different needs and desires. Clothes have five different purposes to serve, as follows: (1) the body must be protected from heat, cold, wind, rain, extremes, and changes; (2) warmth of the body must be maintained; (3) the body must be protected from injury; (4) the wearing apparel must be suited to the occasion; and (5) it must meet certain standards of adornment and self-respect.

The variety of clothing has increased greatly during recent years because of the lengthening of the leisure time that came with the decrease in the hours of labor. The greater number of activities, such as parties, clubs, automobile excursions, athletic games and sports, swimming, steamship excursions, etc., have attracted great numbers of persons and have brought with them a desire for specialized types of wearing apparel that are distinctive, appropriate to the occasion, and cause the wearer to appear to advantage.

Human nature has practically unlimited wants, hence to meet these wants most people spend all they earn. An unlimited variety of clothing, jewelry, and other commodities appears on the market, and most people find it difficult to refrain from buying.

We soon tire of the same style of clothing, jewelry, and commodities, and we get less and less satisfaction out of them; it follows that the intense desire for any piece of wearing apparel or any other commodity tends to become less and less as we use each successive unit of it. The demand then shifts to a new type of wearing apparel or to a new style.

**Laws of Consumption.** Human nature responds according to definite reactions in meeting the wants with regard to clothing or other commodities. These reactions are spoken of as the laws of consumption, as follows:

I. As we gradually satisfy our desire with a definite kind of wearing apparel, — as a new collar of special pattern, — we secure our greatest pleasure from the first, and reduce our pleasure with each additional collar we buy until we finally lose interest and buy no more of this style. This reaction is called the *law of diminishing utility*, that is, in the consumption of a set of identical goods (collar of same design) the satisfaction we derive decreases with each unit (collar) we purchase.

II. By changing the style of collar we have a new form of consumption of them. This reaction is called the *law of variety*, which arises from different designs.

III. Our satisfaction from the collar may be increased if we have a proper necktie and shirt to go with it so that they all harmonize. The neckwear is the framework of the face, and the collar, tie, and shirt combined bring the greatest satisfaction. This reaction is called the *law of harmony* and may be expressed as follows: Greater satisfaction results from the consumption of a group of commodities in combination (collar, necktie, and shirt) than from their consumption separately.

IV. Our instinct of imitation causes people of the same age and social standing to dress similarly. Hence we have the *law of imitation*, which states that men tend to imitate (in dress and other commodities, according to their social standing and age) in consumption.

V. In spending our income for clothing we try to distribute whatever we have in such a way as to secure a variety of wearing apparel. We spend some for collars, some for shirts, gloves, neckties, suits, overcoats, hosiery, shoes, etc. We do not buy suits exclusively.

This tendency or reaction is called the *law of economic order of consumption*, which states that men try to distribute their expenditures for different kinds of clothing and other goods so as to obtain the greatest possible consumer's surplus.

VI. Each community has classes with different social standing. Within each class the standard of living is fairly constant, and the amount of the income spent for the various groups of commodities is fairly constant for that social group. The relation among the family expenditures for different groups may be expressed in terms of Engel's *law of family expenditures* as follows: As the income of a family increases, the proportional expenditure for clothing, rent, fuel, and light remains fairly constant, while the amount for food decreases, and that for cultural and higher enjoyment increases.

**Law of the Consumer's Dollar.** The consumer may think that he works for money, but he really works for food, shelter, clothing, education for his children, recreation, in short for as many as possible of all the good things, tangible and intangible, that a man would want. His wants are and always will be endless, and this fine desire or trait is responsible for our progress.

The consumer with his wages goes out to see what he can buy. The more he can buy for a dollar the happier or better off he is, and society, business, industry, including his neighbor, his employer, are better off. This is called the *law of the consumer's dollar*. Since most of his wages goes into the purchase of necessities — 40 per cent for food, 25 per cent for rent — only 35 per cent is available for the things besides necessities. Hence in order that the great mass of people may enjoy more of the commodities that give us something in addition to a mere existence, it is necessary to have wages of fairly high buying power and goods easy to buy.

Most consumers are interested in low prices, and these can only be secured by mass production for the great mass of people. This means that from the time the raw material leaves its source of origin to the time it is placed in the hands of the consumer every process that can be mechanized should be mechanized, and every item of waste eliminated, including unnecessary labor. One may think that this will produce unemployment, but lower prices mean that more goods will be produced and people will have a shorter working week.

The two great factors of prosperity are wages, which represents consuming power, and, moderate prices. When wages and prices remain on the same level there is an element of safety for prosperity, but the moment prices outstrip wages prosperity decreases. Therefore, when industry calls for increased prices due to higher wages, if there is not a corresponding increase in the number of people employed, prices will go higher and there will be less buying.

Careful investigations have shown that the spending power of classes is not the same for people living in the cities as for those in smaller communities and towns. The amount spent for clothing is considerably more for families living in the city than for families in the towns and in the country districts.

**Variety in Use.** Since our desires or wants in wearing apparel are unlimited, it follows that there are constantly new types appearing. These types may differ not only in composition, structure (weave), and finish, but also in design. The new design may be an elaborate *motif* or a display of new shades of color or simply a change in direction or position. Few people realize how a change in direction or in position of an article of wearing apparel may produce a decided new effect. Take the hat which rests on the most important part of the body. The same hat may be placed in a very precise position, which gives a conservative style effect, or tipped at different angles so as to make one appear in varying moods. Then again, the appearance due to the position of the hat may make one appear aristocratic, vulgar, serious or humorous, gloomy or cheerful, dignified or flippant, rakish or righteous, fresh or wilted, alive or dead. Even a change of position of the same hat gives us a new thrill of joy, and thus creates additional pleasure or psychological income.

**Thrift.** Saving means the production of more income than is used, thus resulting in the accumulation of capital. Thrift is economy both in the buying of clothing and other commodities and in the consumption of these commodities. Saving and thrift are both important factors in the development of a country. Working people should save part of their earnings in order to have something for old age or for a time of sickness when they are unable to work. They should not only save their money but should be thrifty and

saving in the way they consume the commodities, such as clothing, that they purchase with their income. Thrift is a quality that implies common sense or good judgment in expenditures. Care in looking after wearing apparel will lengthen its period of usefulness and thus give a greater return for the money spent on it. Careful planning of our clothing needs and careful spending will give the maximum return in value — 100 cents on every dollar.

Economical consumption of clothing means the purchase and the use of clothing to satisfy the largest number of wants at the minimum cost. Only by a definite plan for distributing our income into proper divisions for (a) shelter, (b) maintenance, (c) food, (d) clothing, (e) advancement, (f) savings, etc., as outlined in Chapters XI–XIII of the author's book *Clothing and Style*, can we determine how much to spend for different commodities.

By following such a budget plan we can spend wisely and not according to passing whims and fancies. A person who lives by a budget is usually happier, more contented, and more businesslike than one who spends his money as he earns it.

We saw in the previous chapter that there are different standards of living for different groups. These standards are fairly constant within the same income groups and are the product of years of living in the same general manner until fairly permanent standards are crystallized. The lowest income group receiving the minimum wage must of necessity observe the following practices: (a) good spending habits, (b) saving habits, and (c) frugal homemaking. Otherwise, the family would find itself unable to subsist upon the available income.

**Cost of Living.** The United States Bureau of Labor Statistics has made a number of studies of how much money wage and salary workers earn and how they spend their money. One study was made during the last year of the War and the four months following the armistice, when the cost of living at that time was about the same as in 1929 and wages were a little lower.

Ninety-two cities and towns in forty-two States were selected to make the investigation representative of the country as a whole. Over twelve thousand families were interrogated about the source and amount of their income, the way they spent it, and how much, if any, they had left over at the end of the year. The families were

those of wage-earners or of low and medium-sized salary earners. Only families with at least one child were included in the survey, and each family was self-supporting and English-speaking.

In these families more than half of the men made less than \$1250 a year, and about a fourth made less than \$1050. This was from 93 to 94 per cent of the family income for all of the families. The rest of the money came from wages the wife or children received, from taking in lodgers, from gifts, or raising a garden or keeping poultry. The families making under \$900 a year also received an average of sixty-four cents a year from rent and investments. This ran up to as high as \$5.51 a year with the families whose incomes were from \$1200 to \$1500. The families receiving these incomes had two or three children.

The manner in which the families spent the incomes was also found out. In families making less than \$900, the husband earned \$765 and about \$40 more was earned in other ways. Over half of these families were in debt at the end of the year to an average amount of more than \$100. They spent \$31 a month for food, \$9 for clothing, \$10 for rent, \$5 for fuel and light, and \$2.50 for furniture and furnishings. Twelve dollars were spent for miscellaneous items, which included car fare, amusements and vacation, newspapers and magazines, school tuition and books, medical care, funeral expenses, insurance, taxes, soap, etc. Low rent may be due to cottages specially constructed by corporations.

In families making from \$900 to \$1200, the husband earned an average amount of \$1013, and about \$60 was received from other sources. They spent \$38 a month for food, \$13 for clothing, \$12 for rent, \$5 for fuel and light, \$4 for furniture and furnishings, and \$17 for miscellaneous items. On the average, they came out about even at the end of the year; about two-thirds were a little ahead and one-third were about \$100 in debt.

In the families with incomes of \$1200 and \$1500 a year the husband earned \$1252, and the family received another \$90 in other ways. They spent \$43 a month for food, \$17 for clothing, \$15 for rent, \$6 for fuel and light, \$5 for furniture and furnishings, and \$12 for miscellaneous items. These families, on the average, were able to save about \$40 a year. Some of the families had incomes as high as \$2000 or \$2500. In such cases the husband made about

\$1800 a year, and most of the rest of the money came from the children. These families were larger, having usually four or more children at home.

It must be understood that all figures for incomes and expenditures given above are averages obtained from the study of 12,000 families.

The United States government made a report of the expenditures of government employees between 1930–1931 and found the following results :

AVERAGE AMOUNT AND PER CENT OF EXPENDITURE FOR EACH GROUP OF ITEMS

[Number of families, 100; average persons per family, 4.5; average equivalent adult males, 3.27; average income per family, \$1,711.87]

Item	Average yearly ex- pense	Per cent of yearly expense	Item	Average yearly ex- pense	Per cent of yearly expense
Food .....	\$556.12	32.3	Furniture and house furnishings .....	\$88.55	5.2
Clothing of —			Life insurance .....	59.16	3.4
Husband .....	63.59	3.7	Street-car and bus fares	37.40	2.2
Wife .....	59.21	3.4	Expenses of sickness ...	64.73	3.8
Children .....	87.87	5.1	School expenses .....	6.41	.4
Total, clothing .....	210.67	12.2	Cleaning supplies .....	16.64	1.0
Housing .....	388.81	22.6	Barber .....	12.37	.7
Fuel and light .....	103.20	6.0	Miscellaneous expenses.	175.77	10.2
			Total expenses ....	1,719.83	100.0

The above table shows the expenditures of the families during the year, distributed among the principal classes of items. Food constitutes the principal item of expense — 32.3 per cent of the total expenditure. Housing was next in importance, forming 22.6 per cent of the year's expenditures, while 12.2 per cent went for clothing. No other single item required as much as 10 per cent. The average outlay for clothing per year per family was \$210.67.

The following tables enumerate all of the clothing purchased by the husband and by the wife, and in connection with each article it shows the average number of articles purchased for all families, the average expenditure per family, and the average expenditure per article. It also shows similar averages for the families which purchased each specified article.

AVERAGE QUANTITY OF AND EXPENDITURE FOR CLOTHING PURCHASED  
PER FAMILY IN ONE YEAR*Clothing of 100 husbands*

Article	All families		Families purchasing				
	Average number of articles per family	Average expenditure per family	Number of families	Number of articles purchased	Average number of articles per family	Average expenditure per family	Average cost per article
Headgear:							
Hats, felt .....	0.56	\$2.06	54	56	1.04	\$3.82	\$3.68
Hats, straw .....	.18	.44	17	18	1.06	2.58	2.44
Caps .....	.86	1.22	62	86	1.39	1.96	1.41
Outer garments:							
Suits, wool .....	.41	11.25	40	41	1.03	28.12	27.43
Coats (separate) .....	.02	.14	2	2	1.00	6.75	6.75
Trousers —							
Wool .....	.73	2.10	40	73	1.83	5.25	2.88
Cotton .....	1.39	2.82	62	139	2.24	4.55	2.03
Overcoats .....	.14	3.33	14	14	1.00	23.75	23.75
Mackinaws .....	.03	.37	3	3	1.00	12.17	12.17
Raincoats .....	.02	.15	2	2	1.00	7.38	7.38
Sweaters and lumberjacks .....	.32	.97	30	32	1.07	3.24	3.04
Overalls .....	.35	.60	18	35	1.94	3.34	1.72
Jumpers .....	.08	.11	5	8	1.60	2.16	1.35
Shirts (work or dress):							
Cotton .....	4.50	5.14	98	450	4.59	5.25	1.14
Wool .....	.12	.31	8	12	1.50	3.84	2.56
Underwear:							
Undershirts:							
Cotton .....	.45	.40	17	45	2.65	2.35	.89
Wool .....	.02	.03	2	2	1.00	1.50	1.50
Drawers —							
Cotton .....	.45	.37	16	45	2.81	2.34	.83
Wool .....	.01	.02	1	1	1.00	1.50	1.50
Union suits —							
Cotton .....	2.28	3.05	81	228	2.81	3.77	1.34
Wool .....	.15	.35	7	15	2.14	5.04	2.35
Pajamas .....	.18	.25	11	18	1.64	2.30	1.41
Nightshirts .....	.08	.09	4	8	2.00	2.31	1.16
Footwear:							
Socks —							
Cotton .....	14.09	3.41	99	1,409	14.23	3.44	.24
Wool .....	.57	.36	21	57	2.71	1.69	.62
Silk or rayon .....	.98	.53	30	98	3.27	1.77	.54
Shoes —							
High .....	.87	3.68	51	87	1.71	7.21	4.23
Low .....	1.44	6.57	84	144	1.71	7.82	4.56
Shoe repairing .....		2.88	92			3.13	
Shoe shines .....	.19	.02	4	19	4.75	.48	.10
House slippers .....	.36	.52	36	36	1.00	1.45	1.45
Rubbers .....	.54	.78	48	54	1.13	1.63	1.45
Arctics .....	.06	.22	6	6	1.00	3.67	3.67
Gloves and mittens:							
Leather, dress .....	0.12	\$0.21	11	12	1.09	\$1.87	\$1.71
Leather, work .....	2.06	.81	12	206	17.17	6.78	.39
Cotton .....	9.34	1.97	60	934	15.57	3.28	.21
Wool .....	.04	.04	4	4	1.00	1.11	1.11
Collars .....	.39	.10	12	39	3.25	.85	.26
Ties .....	1.89	1.52	84	189	2.25	1.81	.81
Handkerchiefs .....	5.73	.60	70	573	8.19	.86	.11
Mufflers and scarfs .....	.21	.33	19	21	1.11	1.73	1.57
Garters .....	1.18	.33	71	118	1.66	.46	.28
Belts .....	.48	.37	44	48	1.09	.85	.78

Article	All families		Families purchasing				
	Average number of articles per family	Average expenditure per family	Number of families	Number of articles purchased	Average number of articles per family	Average expenditures per family	Average cost per article
Suspenders.....	.19	.11	15	19	1.27	.72	.57
Umbrellas.....	.02	.05	2	2	1.00	2.25	2.25
Pocketbooks.....	.09	.06	9	9	1.00	.66	.66
Watches.....		.88	7			12.53	
Other clothing.....		.23	12			1.91	
Cleaning and repairing.....		1.46	52			2.81	
Total, husbands' clothing.....		63.59					

Clothing of 100 wives

Headgear: hats.....	1.49	\$3.80	94	149	1.59	\$4.04	\$2.55
Outer garments:							
Waists and blouses —							
Cotton.....	.02	.03	1	2	2.00	3.00	1.50
Silk or rayon.....	.01	.02	1	1	1.00	2.25	2.25
Dresses —							
Cotton.....	1.02	1.77	50	102	2.04	3.55	1.74
Wool.....	.05	.48	5	5	1.00	9.59	9.59
Silk or rayon.....	1.03	7.73	76	103	1.36	10.18	7.51
House dresses and aprons.....	3.20	3.33	94	320	3.40	3.55	1.04
Aprons.....	.63	.21	25	63	2.52	.85	.34
Coats —							
Cotton.....	.01	.12	1	1	1.00	12.00	12.00
Wool.....	.42	10.54	40	42	1.05	26.35	25.09
Fur.....	.01	1.00	1	1	1.00	100.00	100.00
Raincoats.....	.04	.27	4	4	1.00	6.63	6.63
Sweaters —							
Cotton.....	.02	.04	2	2	1.00	1.99	1.99
Wool.....	.09	.30	9	9	1.00	3.32	3.32
Furs.....	.01	.30	1	1	1.00	29.75	29.75
Underwear:							
Petticoats and slips —							
Cotton.....	1.56	1.19	67	156	2.33	1.77	.76
Silk or rayon.....	.42	.55	27	42	1.56	2.04	1.31
Corsets.....	.51	1.34	46	51	1.11	2.92	2.63
Brassières.....	.51	.27	23	51	2.22	1.17	.53
Chemises —							
Cotton.....	.05	.04	2	5	2.50	1.75	.70
Silk or rayon.....	.17	.21	9	17	1.89	2.38	1.26
Union suits —							
Cotton.....	.70	.68	30	70	2.33	2.25	.96
Wool.....	.02	.06	2	2	1.00	2.79	2.79
Shirts and vests —							
Cotton.....	1.65	.65	48	165	3.44	1.36	.40
Silk or rayon.....	.37	.28	18	37	2.06	1.53	.74
Bloomers, step-ins and drawers —							
Cotton.....	1.40	.80	48	140	2.92	1.66	.57
Silk or rayon.....	1.28	1.08	49	128	2.61	2.21	.85
Nightgowns, cotton.....	1.31	1.14	62	131	2.11	1.84	.87
Pajamas —							
Cotton.....	.01	.01	1	1	1.00	.80	.80
Silk or rayon.....	.01	.03	1	1	1.00	2.95	2.95
Kimonos and bathrobes —							
Cotton.....	.07	.16	7	7	1.00	2.27	2.27
Wool.....	.02	.10	2	2	1.00	5.00	5.00
Silk or rayon.....	.01	.03	1	1	1.00	2.95	2.95

*Clothing of 100 wives — Continued*

Article	All families		Families purchasing				
	Average number of articles per family	Average expenditure per family	Number of families	Number of articles purchased	Average number of articles per family	Average expenditure per family	Average cost per article
Footwear:							
Stockings —							
Cotton.....	3.74	\$1.30	68	374	5.50	\$1.91	\$0.35
Wool.....	.06	.06	4	6	1.50	1.38	.92
Silk or rayon.....	4.01	4.03	93	401	4.31	4.33	1.01
Shoes —							
High.....	.02	.10	2	2	1.00	5.25	5.25
Low.....	1.87	7.99	100	187	1.87	7.99	4.27
Shoe repairing.....		1.15	73			1.58	
House slippers.....	.82	.80	55	82	1.49	1.46	.98
Rubbers.....	.08	.08	8	8	1.00	1.01	1.01
Arctics.....	.34	.76	34	34	1.00	2.23	2.23
Gloves and mittens:							
Kid.....	.12	.30	12	12	1.00	2.49	2.49
Cotton.....	.52	.46	46	52	1.13	1.00	.89
Wool.....	.02	.02	2	2	1.00	.98	.98
Silk.....	.02	.02	2	2	1.00	.88	.88
Collar and cuff sets.....	.02	.01	2	2	1.00	.60	.60
Handkerchiefs.....	4.49	.50	60	449	7.48	.83	.11
Scarfs.....	.14	.23	14	14	1.00	1.64	1.64
Garters.....	.80	.15	49	80	1.63	.30	.18
Belts.....	.04	.01	2	4	2.00	.28	.14
Hairpins, combs, ornaments, etc.....		.20	63			.31	
Sanitary supplies.....		.71	41			1.72	
Umbrellas.....	.08	.18	8	8	1.00	2.22	2.22
Handbags and purses.....	.48	.93	46	48	1.04	2.03	1.95
Watches and jewelry.....		.13	10			1.32	
Other clothing.....		.01	2			.74	
Cleaning, pressing, and repairing.....		.52	24			2.17	
Total, wives' clothing.....		59.21					

Such items as cleaning, pressing, shoe repairing are reported; other services are not.

An explanation of the first item of the table will help to make clear the method of presentation. Only 54 of the 100 husbands actually bought felt hats during the year. They bought 56 such hats, making an average in round figures of 1 hat per husband buying. The average expenditure per family was \$3.82 and the average cost per hat was \$3.68. However, the more common inquiry is, How many felt hats are consumed per man per year and what do felt hats cost per year? The first two columns of the table show that the average man buys 0.56 felt hats per year and pays out an average of \$2.06 per year for felt hats. The other items are analyzed in like manner.

The average expenditure for clothing for the 100 husbands, \$63.59 for the year, absorbed 3.7 per cent of all the family expenditures. Of

the husbands' clothing expense, 43 per cent was for outer garments, 25 per cent for footwear, 7 per cent for underwear, and 6 per cent for headgear.

On an average the husband appears to buy a felt hat once in about every 2 years, a wool suit every  $2\frac{1}{2}$  years, an overcoat every 7 years, and a sweater or "lumberjack" every 3 years. Five shirts, 2 ties, 2 cotton union suits, 14 pairs of cotton socks and 1 pair of silk or rayon socks, 1 pair of garters, 2 pairs of shoes, 2 pairs of leather work gloves, and 9 pairs of cotton work gloves were purchased by each husband, on the average, during the year. The husband usually buys shirts with collars attached; the replacement on separate collars was only 1 every  $2\frac{1}{2}$  years.

The men's felt hats cost on an average \$3.68 each, the caps \$1.41, the wool suits \$27.43, overcoats \$23.75, cotton shirts \$1.14, cotton union suits \$1.34, cotton socks 24 cents, and silk or rayon socks 54 cents a pair. High shoes averaged \$4.23 and low shoes averaged \$4.56 a pair, leather work gloves 39 cents, and cotton gloves 21 cents. The quantity and cost of other accessories and the upkeep and repair of clothing are shown in the table.

The value of clothing for the 100 wives, \$59.21 per year, absorbed 3.4 per cent of all expenditures. For the wives, 44 per cent of their clothing expenditures was for outer garments, 26 per cent for footwear, 15 per cent for underwear, and 6 per cent for headgear. From the standpoint of replacement of the principal articles of clothing, the wife purchased, on an average, a wool coat every  $2\frac{1}{2}$  years, 3 hats every 2 years, a pair of cotton gloves every 2 years, and a corset and brassière every 2 years. During the year she purchased 2 dresses, 4 pairs of cotton stockings, 4 pairs of silk or rayon stockings, 2 pairs of shoes, 3 house dresses, 2 petticoats or slips, 2 pairs of bloomers, a nightgown, and a pair of house slippers.

The wife's wool coat averaged in cost \$25.09, the hat \$2.55, cotton gloves \$0.89, corset \$2.63, and brassière \$0.53. The cotton dress had an average cost of \$1.74 and the silk or rayon dress \$7.51, the cotton stockings \$0.35, and the silk or rayon stockings \$1.01 a pair. The shoes averaged \$4.27 for the low and \$5.25 for the high shoes, the house dresses \$1.04, the cotton petticoats or slips \$0.76, and the silk or rayon petticoats or slips \$1.31. The cotton bloomers averaged \$0.57 and the silk or rayon bloomers \$0.85, the cotton nightgowns \$0.87, and the house slippers \$0.98.

Note the limited amount of clothing purchased and the prices paid. There is a need of more efficient production so as to give more clothing for the same budget allowance.

AVERAGE QUANTITY OF AND EXPENDITURE FOR CLOTHING FOR  
CHILDREN, BY AGE GROUPS*Boys*

[Age groups have been omitted in cases where no entries occurred]

Article	Age group	All families (100)		Families purchasing					
		Average num- ber of arti- cles per fam- ily	Average ex- pend- iture per fam- ily	Number of families	Number of child- ren	Articles purchased		Average ex- penditure	
						Number	Average per child	Per child	Per article
Headgear:									
Hats, straw.....	Under 4.....	0.01	( <sup>1</sup> )	1	1	1	1.00	\$0.25	\$0.25
	4 and under 8..	.01	( <sup>1</sup> )	1	1	1	1.00	.25	.25
Hats, other.....	Under 4.....	.04	\$0.03	3	3	4	1.33	.92	.69
	4 and under 8..	.06	.05	5	6	6	1.00	.89	.89
	8 and under 12..	.02	.02	2	2	2	1.00	1.00	1.00
	15 and 16.....	.02	.07	2	2	2	1.00	3.48	3.48
Caps.....	Under 4.....	.26	.18	18	19	26	1.37	.97	.71
	4 and under 8..	.36	.30	27	28	36	1.29	1.09	.85
	8 and under 12..	.59	.56	32	36	59	1.64	1.55	.95
	12 and under 15	.17	.19	9	10	17	1.70	1.90	1.12
	15 and 16.....	.01	.02	1	1	1	1.00	2.00	2.00
Outer garments:									
Suits, wool.....	Under 4.....	.07	.14	4	4	7	1.75	3.62	2.07
	4 and under 8..	.16	.76	13	14	16	1.14	5.42	4.74
	8 and under 12..	.21	2.07	18	21	21	1.00	9.87	9.87
	12 and under 15	.07	.90	6	7	7	1.00	12.79	12.79
	15 and 16.....	.04	.61	3	3	4	1.33	20.50	15.38
Suits, cotton.....	Under 4.....	.78	.73	18	19	78	4.11	3.82	.93
	4 and under 8..	.66	.71	18	18	66	3.67	3.94	1.08
	8 and under 12..	.12	.32	6	6	12	2.00	5.33	2.67
	12 and under 15	.02	.11	2	2	2	1.00	5.48	5.48
Trousers, wool.....	Under 4.....	.01	.01	1	1	1	1.00	1.00	1.00
	4 and under 8..	.08	.09	4	5	8	1.60	1.87	1.17
	8 and under 12..	.34	.70	14	15	34	2.27	4.64	2.05
	12 and under 15	.05	.11	3	3	5	1.67	3.62	2.17
	15 and 16.....	.04	.16	2	2	4	2.00	7.90	3.95
Trousers, cotton.....	Under 4.....	.03	.01	1	1	3	3.00	1.50	.50
	4 and under 8..	.23	.19	10	10	23	2.30	1.94	.85
	8 and under 12..	.81	.93	23	27	81	3.00	3.45	1.15
	12 and under 15	.24	.47	8	9	24	2.67	5.25	1.97
Overcoats.....	Under 4.....	.13	.49	13	13	13	1.00	3.75	3.75
	4 and under 8..	.17	1.01	17	18	17	.94	5.60	5.92
	8 and under 12..	.11	.70	11	12	11	.92	5.83	6.36
	12 and under 15	.05	.42	5	5	5	1.00	8.38	8.38
	15 and 16.....	.02	.31	2	2	2	1.00	15.50	15.50
Mackinaws.....	8 and under 12..	.04	.21	4	4	4	1.00	5.23	5.23
	12 and under 15	.02	.13	2	3	2	.67	4.28	6.43
Raincoats.....	8 and under 12..	.03	.07	2	3	3	1.00	2.33	2.33
	12 and under 15	.01	.06	1	1	1	1.00	6.00	6.00
Sweaters and lumber- jacks.....	Under 4.....	.12	.18	11	12	12	1.00	1.46	1.46
	4 and under 8..	.25	.39	20	21	25	1.19	1.86	1.56
	8 and under 12..	.35	.83	22	26	35	1.35	3.20	2.38
	12 and under 15	.08	.26	8	9	8	.89	2.88	3.24
Overalls.....	Under 4.....	.25	.17	10	10	25	2.50	1.73	.69
	4 and under 8..	.37	.29	12	12	37	3.08	2.47	.80
	8 and under 12..	.23	.22	9	10	23	2.30	2.23	.97
	12 and under 15	.06	.06	4	5	6	1.20	1.20	1.00

<sup>1</sup> Less than 1 cent.

# CONSUMPTION OF CLOTHING AND TEXTILES 129

Article	Age group	All families (100)		Families purchasing					
		Average num- ber of arti- cles per fam- ily	Average ex- pend- iture per fam- ily	Number of families	Number of chil- dren	Articles purchased		Average ex- penditure	
						Num- ber	Average per child	Per child	Per arti- cle
Outer garments — Contd.									
Shirts, cotton . . . . .	Under 4 . . . . .	0.23	\$0.08	5	6	23	3.83	\$1.36	\$0.35
	4 and under 8 . . . . .	.73	.39	18	19	73	3.84	2.03	.53
	8 and under 12 . . . . .	1.98	1.30	32	36	198	5.50	3.60	.65
	12 and under 15 . . . . .	.63	.51	10	11	63	5.73	4.65	.81
	15 and 16 . . . . .	.11	.13	3	3	11	3.67	4.33	1.18
Shirts, wool . . . . .	4 and under 8 . . . . .	.02	.02	1	1	2	2.00	1.78	.89
	8 and under 12 . . . . .	.10	.15	4	5	10	2.00	2.94	1.47
	12 and under 15 . . . . .	.02	.02	1	1	2	2.00	2.00	1.00
Underwear:									
Undershirts, cotton . . . . .	Under 4 . . . . .	.25	.07	7	7	25	3.57	.95	.27
	4 and under 8 . . . . .	.08	.03	2	2	8	4.00	1.30	.33
	15 and 16 . . . . .	.02	.01	1	1	2	2.00	1.00	.50
Undershirts, wool . . . . .	Under 4 . . . . .	.15	.10	6	6	15	2.50	1.67	.67
Drawers, cotton . . . . .	4 and under 8 . . . . .	.06	.02	1	1	6	6.00	2.10	.35
	15 and 16 . . . . .	.02	.01	1	1	2	2.00	1.00	.50
Union suits, cotton . . . . .	Under 4 . . . . .	.54	.32	15	16	54	3.38	1.97	.58
	4 and under 8 . . . . .	1.01	.70	27	28	101	3.61	2.52	.70
	8 and under 12 . . . . .	1.14	1.01	33	37	114	3.08	2.73	.89
	12 and under 15 . . . . .	.35	.35	10	11	35	3.18	3.21	1.01
	15 and 16 . . . . .	.05	.06	2	2	5	2.50	2.77	1.11
Union suits, wool . . . . .	4 and under 8 . . . . .	.02	.04	1	1	2	2.00	3.96	1.98
	8 and under 12 . . . . .	.04	.06	2	2	4	2.00	3.10	1.55
	12 and under 15 . . . . .	.04	.05	2	2	4	2.00	2.62	1.31
Pajamas . . . . .	Under 4 . . . . .	.15	.10	9	9	15	1.67	1.06	.64
	4 and under 8 . . . . .	.19	.15	9	10	19	1.90	1.52	.80
	8 and under 12 . . . . .	.19	.14	8	10	19	1.90	1.41	.74
	12 and under 15 . . . . .	.06	.05	4	4	6	1.50	1.22	.81
	15 and 16 . . . . .	.01	.01	1	1	1	1.00	1.00	1.00
Nightshirts . . . . .	Under 4 . . . . .	.21	.09	6	7	21	3.00	1.27	.42
	4 and under 8 . . . . .	.03	.01	2	2	3	1.50	.60	.40
	8 and under 12 . . . . .	.04	.03	2	2	4	2.00	1.39	.70
Footwear:									
Socks, cotton . . . . .	Under 4 . . . . .	2.02	.45	23	24	202	8.42	1.87	.22
	4 and under 8 . . . . .	3.35	.78	28	29	335	11.55	2.69	.23
	8 and under 12 . . . . .	4.44	1.32	34	38	444	11.68	3.48	.30
	12 and under 15 . . . . .	1.91	.56	10	11	191	17.36	5.07	.29
	15 and 16 . . . . .	.18	.05	3	3	18	6.00	1.53	.26
Socks, wool . . . . .	Under 4 . . . . .	.12	.05	4	4	12	3.00	1.38	.46
	4 and under 8 . . . . .	.03	.02	1	1	3	3.00	2.25	.75
	8 and under 12 . . . . .	.08	.05	4	4	8	2.00	1.21	.60
	12 and under 15 . . . . .	.05	.04	2	3	5	1.67	1.17	.70
	15 and 16 . . . . .	.09	.03	3	3	9	3.00	1.13	.38
Socks, silk or rayon . . . . .	Under 4 . . . . .	.40	.68	21	22	40	1.82	3.09	1.70
Shoes, high . . . . .	4 and under 8 . . . . .	.54	1.19	23	24	54	2.25	4.97	2.21
	8 and under 12 . . . . .	1.05	2.45	32	36	105	2.92	6.80	2.33
	12 and under 15 . . . . .	.28	.63	10	11	28	2.80	6.29	2.25
Shoes, low . . . . .	Under 4 . . . . .	.26	.43	16	17	26	1.53	2.54	1.66
	4 and under 8 . . . . .	.44	.97	25	26	44	1.69	3.72	2.20
	8 and under 12 . . . . .	.59	1.51	31	34	59	1.74	4.45	2.57
	12 and under 15 . . . . .	.18	.62	8	9	18	2.00	6.93	3.46
	15 and 16 . . . . .	.08	.31	3	3	8	2.67	10.33	3.88
Shoe repairing . . . . .	Under 4 . . . . .	.....	.03	4	4	.....	.....	.69	.....
	4 and under 8 . . . . .	.....	.19	14	15	.....	.....	1.27	.....
	8 and under 12 . . . . .	.....	.58	25	28	.....	.....	2.09	.....
	12 and under 15 . . . . .	.....	.28	10	11	.....	.....	2.54	.....
	15 and 16 . . . . .	.....	.06	3	3	.....	.....	2.02	.....
Rubber boots . . . . .	Under 4 . . . . .	.01	.03	1	1	1	1.00	3.00	3.00
	8 and under 12 . . . . .	.02	.05	2	2	2	1.00	2.49	2.49

## Boys — Continued

Article	Age group	All families (100)		Families purchasing <sup>1</sup>					
		Average num- ber of arti- cles per fam- ily	Average ex- pend- iture per fam- ily	Number of families	Number of child- ren	Articles purchased		Average ex- penditure	
						Number	Average per child	Per child	Per arti- cle
Footwear — Continued									
House slippers . . . . .	Under 4 . . . . .	0.02	\$0.01	2	2	2	1.00	\$0.55	\$0.55
	4 and under 8 . . . . .	.07	.06	7	7	7	1.00	.80	.80
	8 and under 12 . . . . .	.08	.07	6	7	8	1.14	.95	.83
	12 and under 15 . . . . .	.02	.02	2	2	2	1.00	1.18	1.18
	15 and 16 . . . . .	.01	.01	1	1	1	1.00	.145	1.45
Rubbers . . . . .	4 and under 8 . . . . .	.08	.07	8	9	8	.89	.76	.85
	8 and under 12 . . . . .	.27	.29	22	24	27	1.13	1.19	1.06
	12 and under 15 . . . . .	.10	.12	8	9	10	1.11	1.39	1.25
	15 and 16 . . . . .	.02	.02	2	2	2	1.00	1.13	1.13
Arctics . . . . .	Under 4 . . . . .	.03	.05	3	3	3	1.00	1.58	1.58
	4 and under 8 . . . . .	.13	.25	13	14	13	.93	1.79	1.93
	8 and under 12 . . . . .	.01	.03	1	1	1	1.00	2.95	2.95
Gloves and mittens, leather, dress . . . . .	Under 4 . . . . .	.01	.01	1	1	1	1.00	.75	.75
	4 and under 8 . . . . .	.06	.05	6	6	6	1.00	.77	.77
	8 and under 12 . . . . .	.13	.12	11	13	13	1.00	.91	.91
	12 and under 15 . . . . .	.05	.05	4	5	5	1.00	1.09	1.09
	15 and 16 . . . . .	.01	.02	1	1	1	1.00	2.25	2.25
Gloves and mittens, cot- ton . . . . .	Under 4 . . . . .	.06	.02	5	5	6	1.20	.39	.33
	4 and under 8 . . . . .	.29	.09	17	18	29	1.61	.49	.30
	8 and under 12 . . . . .	.39	.15	22	25	39	1.56	.60	.39
	12 and under 15 . . . . .	.03	.01	3	3	3	1.00	.38	.38
	15 and 16 . . . . .	.01	( <sup>1</sup> )	1	1	1	1.00	.20	.20
Gloves and mittens, wool	Under 4 . . . . .	.10	.06	7	8	10	1.25	.73	.58
	4 and under 8 . . . . .	.07	.04	5	5	7	1.40	.75	.54
	8 and under 12 . . . . .	.04	.02	2	2	4	2.00	1.23	.61
	12 and under 15 . . . . .	.04	.03	4	5	4	.80	.52	.65
Ties . . . . .	4 and under 8 . . . . .	.23	.05	10	10	23	2.30	.50	.22
	8 and under 12 . . . . .	.64	.20	27	31	64	2.06	.63	.31
	12 and under 15 . . . . .	.22	.09	7	8	22	2.75	1.06	.39
	15 and 16 . . . . .	.08	.03	2	2	8	4.00	1.38	.34
Handkerchiefs . . . . .	Under 4 . . . . .	.18	.01	3	3	18	6.00	.23	.04
	4 and under 8 . . . . .	.91	.05	14	15	91	6.07	.35	.06
	8 and under 12 . . . . .	1.79	.12	24	26	179	6.88	.47	.07
	12 and under 15 . . . . .	.61	.05	7	8	61	7.63	.61	.08
	15 and 16 . . . . .	.14	.01	2	2	14	7.00	.70	.10
Mufflers and scarfs . . . . .	4 and under 8 . . . . .	.01	.01	1	1	1	1.00	.50	.50
	8 and under 12 . . . . .	.03	.02	3	3	3	1.00	.58	.58
	12 and under 15 . . . . .	.02	.02	2	2	2	1.00	1.25	1.25
	15 and 16 . . . . .	.01	.01	1	1	1	1.00	1.00	1.00
Garters . . . . .	Under 4 . . . . .	.32	.05	15	16	32	2.00	.33	.17
	4 and under 8 . . . . .	.56	.07	24	25	56	2.24	.28	.13
	8 and under 12 . . . . .	.61	.07	24	27	61	2.26	.24	.11
	12 and under 15 . . . . .	.23	.02	9	10	23	2.30	.21	.09
	15 and 16 . . . . .	.03	.01	2	2	3	1.33	.43	.28
Belts . . . . .	8 and under 12 . . . . .	.21	.06	15	17	21	1.24	.37	.30
	12 and under 15 . . . . .	.07	.04	5	6	7	1.17	.67	.57
	15 and 16 . . . . .	.02	.01	2	2	2	1.00	.50	.50
Suspenders . . . . .	4 and under 8 . . . . .	.02	.01	2	2	2	1.00	.43	.43
	8 and under 12 . . . . .	.06	.03	4	5	6	1.20	.58	.48
Pocketbooks . . . . .	Under 4 . . . . .	.01	( <sup>1</sup> )	1	1	1	1.00	.10	.10
	8 and under 12 . . . . .	.01	.01	1	1	1	1.00	1.00	1.00
	12 and under 15 . . . . .	.01	( <sup>1</sup> )	1	1	1	1.00	.10	.10
Watches and jewelry . . . . .	8 and under 12 . . . . .	.....	.08	3	3	.....	.....	2.75	.....
	12 and under 15 . . . . .	.....	.03	1	1	.....	.....	3.00	.....
Cleaning, pressing, and repairing . . . . .	8 and under 12 . . . . .	.....	.10	5	6	.....	.....	1.75	.....
	15 and 16 . . . . .	.....	.07	2	2	.....	.....	3.25	.....

<sup>1</sup> Less than 1 cent.

# CONSUMPTION OF CLOTHING AND TEXTILES 131

Article	Age group	All families (100)		Families purchasing					
		Average num- ber of arti- cles per fam- ily	Average ex- pend- iture per fam- ily	Number of families	Num- ber of chil- dren	Articles purchased		Average ex- penditure	
						Number	Average per child	Per child	Per arti- cle
Infants' wear (not speci- fied above):									
Dresses.....	Under 4.....	.19	\$0.17	4	4	19	4.75	\$4.31	\$0.91
Rompers.....	Under 4.....	.26	.16	6	6	26	4.33	2.73	.63
Underwaists.....	Under 4.....	.07	.02	3	3	7	2.33	.83	.36
	4 and under 8..	.02	.01	1	1	2	2.00	.50	.25
Petticoats.....	Under 4.....	.16	.06	5	5	16	3.20	1.11	.35
Other infants' wear...	Under 4.....	.....	.29	6	6	.....	.....	4.79	.....
Other clothing.....	Under 4.....	.....	.01	2	2	.....	.....	.70	.....
	4 and under 8..	.....	.05	4	5	.....	.....	.97	.....
	8 and under 12..	.....	.02	1	1	.....	.....	1.50	.....
	15 and 16.....	.....	.02	1	1	.....	.....	2.00	.....
Total, boys' clothing	Under 4.....	.....	5.29	.....	.....	.....	.....	.....	.....
	4 and under 8..	.....	9.11	.....	.....	.....	.....	.....	.....
	8 and under 12..	.....	16.67	.....	.....	.....	.....	.....	.....
	12 and under 15	.....	6.30	.....	.....	.....	.....	.....	.....
	15 and 16.....	.....	2.05	.....	.....	.....	.....	.....	.....

## Girls

Headgear:									
Hats.....	Under 4.....	0.06	\$0.06	5	7	6	0.86	\$0.89	\$1.04
	4 and under 8..	.31	.45	20	36	31	1.19	1.73	1.45
	8 and under 12..	.49	.76	27	32	49	1.53	2.37	1.55
	12 and under 15	.17	.31	10	12	17	1.42	2.60	1.83
	15 and 16.....	.15	.30	7	8	15	1.88	3.79	2.02
Caps.....	Under 4.....	.24	.20	19	20	24	1.20	.99	.83
	4 and under 8..	.43	.31	27	31	43	1.39	1.00	.72
	8 and under 12..	.27	.22	20	22	27	1.23	.99	.81
	12 and under 15	.08	.06	6	8	8	1.00	.69	.69
	15 and 16.....	.01	.01	1	1	1	1.00	.75	.75
Outer garments:									
Ensembles, cotton....	4 and under 8..	.02	.03	1	2	2	1.00	1.50	1.50
	8 and under 12..	.04	.08	4	4	4	1.00	1.94	1.94
	12 and under 15	.01	.01	1	1	1	1.00	1.49	1.49
Ensembles, silk or rayon	12 and under 15	.01	.05	1	1	1	1.00	5.00	5.00
Skirts, cotton.....	8 and under 12..	.02	.03	2	2	2	1.00	1.49	1.49
	15 and 16.....	.01	.02	1	1	1	1.00	2.00	2.00
Skirts, wool.....	4 and under 8..	.05	.06	5	6	5	.83	1.08	1.29
	8 and under 12..	.12	.22	11	12	12	1.00	1.82	1.82
	12 and under 15	.05	.13	4	5	5	1.00	2.65	2.65
	15 and 16.....	.03	.07	3	3	3	1.00	2.47	2.47
Waists and blouses, cot- ton.....	4 and under 8..	.01	.01	1	1	1	1.00	.90	.90
	8 and under 12..	.01	.01	1	1	1	1.00	1.25	1.25
	12 and under 15	.01	.01	1	1	1	1.00	1.00	1.00
	15 and 16.....	.02	.02	1	1	2	2.00	1.50	.75
Waists and blouses, wool	12 and under 15	.01	.01	1	1	1	1.00	1.00	1.00
Waists and blouses, silk or rayon.....	8 and under 12..	.01	.03	1	1	1	1.00	3.00	3.00
Dresses, cotton.....	Under 4.....	1.19	.69	23	25	119	4.76	2.77	.58
	4 and under 8..	2.53	2.01	40	48	253	5.27	4.19	.79
	8 and under 12..	1.72	1.83	34	39	172	4.41	4.71	1.07
	12 and under 15	.47	.53	11	13	47	3.62	4.07	1.13
	15 and 16.....	.21	.29	7	8	21	2.63	3.58	1.36

## Girls — Continued

Article	Age group	All families (100)		Families purchasing					
		Average num- ber of arti- cles per fam- ily	Average ex- pend- iture per fam- ily	Number of families	Num- ber of child- ren	Articles purchased		Average ex- penditure	
						Num- ber	Average per child	Per child	Per arti- cle
Outer garments — Contd.									
Dresses, wool.....	Under 4.....	.04	\$0.07	4	4	4	1.00	\$1.81	\$1.81
	4 and under 8..	.17	.34	10	14	17	1.21	2.41	1.99
	8 and under 12..	.17	.50	11	13	17	1.31	3.85	2.94
	12 and under 15	.02	.05	2	2	2	1.00	2.49	2.49
	15 and 16.....	.02	.08	2	3	2	.67	2.63	3.95
Dresses, silk or rayon	Under 4.....	.04	.06	2	3	4	1.33	1.83	1.38
	4 and under 8..	.09	.29	9	10	9	.90	2.89	3.21
	8 and under 12..	.22	.77	14	18	22	1.22	4.27	3.49
	12 and under 15	.10	.55	7	8	10	1.25	6.91	5.53
	15 and 16.....	.16	.80	8	9	16	1.78	8.85	4.98
House dresses and bungalow aprons...	Under 4.....	.03	.01	1	1	3	3.00	1.20	.40
	4 and under 8..	.03	.02	1	1	3	3.00	1.80	.60
	8 and under 12..	.03	.02	1	1	3	3.00	2.00	.67
	15 and 16.....	.02	.02	1	1	2	2.00	2.00	1.00
Arctics.....	Under 4.....	0.05	.08	5	5	5	1.00	1.62	1.62
	4 and under 8..	.32	.58	29	36	32	.89	1.61	1.82
	8 and under 12..	.28	.53	25	28	28	1.00	1.89	1.89
	12 and under 15	.06	.11	6	7	6	.86	1.54	1.80
	15 and 16.....	.05	.12	5	5	5	1.00	2.47	2.47
Gloves and mittens, kid	Under 4.....	.01	.01	1	1	1	1.00	1.00	1.00
	4 and under 8..	.04	.03	3	4	4	1.00	.75	.75
	8 and under 12..	.01	.01	1	1	1	1.00	1.00	1.00
	12 and under 15	.02	.02	1	2	2	1.00	1.00	1.00
Gloves and mittens, cot- ton.....	Under 4.....	.06	.02	6	6	6	1.00	.36	.36
	4 and under 8..	.13	.05	13	15	13	.87	.34	.39
	8 and under 12..	.27	.13	20	23	27	1.17	.55	.47
	12 and under 15	.09	.05	6	6	9	1.50	.87	.58
	15 and 16.....	.11	.08	6	7	11	1.57	1.15	.73
Gloves and mittens, wool	Under 4.....	.03	.01	3	3	3	1.00	.42	.42
	4 and under 8..	.22	.14	17	21	22	1.05	.66	.63
	8 and under 12..	.15	.10	11	13	15	1.15	.80	.69
	12 and under 15	.03	.03	2	3	3	1.00	.90	.90
	15 and 16.....	.02	.01	1	1	2	2.00	1.00	.50
Gloves and mittens, silk	8 and under 12..	.01	.01	1	1	1	1.00	.75	.75
Ribbons.....	4 and under 8..	.....	.04	5	5	.....	.....	.82	.....
	8 and under 12..	.....	.03	4	5	.....	.....	.67	.....
	15 and 16.....	.....	.01	1	1	.....	.....	.50	.....
Handkerchiefs.....	Under 4.....	.05	( <sup>1</sup> )	2	2	5	2.50	.13	.05
	4 and under 8..	.99	.05	15	17	99	5.82	.29	.05
	8 and under 12..	2.20	.16	24	28	220	7.86	.58	.07
	12 and under 15	.32	.03	4	4	32	8.00	.63	.08
	15 and 16.....	.47	.04	7	8	47	5.88	.55	.09
Scarfs.....	Under 4.....	.01	.01	1	1	1	1.00	1.00	1.00
	4 and under 8..	.02	.02	2	2	2	1.00	1.00	1.00
	8 and under 12..	.05	.05	5	5	5	1.00	1.05	1.05
	12 and under 15	.04	.04	4	4	4	1.00	1.00	1.00
	15 and 16.....	.09	.08	6	7	9	1.29	1.13	.88
Garters.....	Under 4.....	.29	.05	12	13	29	2.23	.41	.18
	4 and under 8..	1.01	.15	34	41	101	2.46	.36	.15
	8 and under 12..	.73	.10	26	31	73	2.35	.31	.13
	12 and under 15	.30	.04	11	13	30	2.31	.33	.14
	15 and 16.....	.10	.01	5	5	10	2.00	.25	.13
Belts.....	4 and under 8..	.05	.01	3	3	5	1.67	.18	.11
	8 and under 12..	.05	.01	3	4	5	1.25	.13	.10
	12 and under 15	.02	.01	1	1	2	2.00	.50	.25
	15 and 16.....	.02	.01	1	1	2	2.00	.50	.25

<sup>1</sup> Less than 1 cent.

Article	Age group	All families (100)		Families purchasing					
		Average number of articles per fam- ily	Average ex- pend- iture per fam- ily	Number of families	Number of children	Articles purchased		Average ex- penditure	
						Number	Average per child	Per child	Per article
Hairpins, fancy combs, ornaments, nets, etc.	4 and under 8..	.....	( <sup>1</sup> )	2	2	.....	.....	\$0.10	.....
	8 and under 12..	.....	\$0.02	10	11	.....	.....	.14	.....
	12 and under 15	.....	.01	5	5	.....	.....	.25	.....
	15 and 16 .....	.....	.02	5	6	.....	.....	.28	.....
Sanitary supplies.....	12 and under 15	.....	.03	2	2	.....	.....	1.50	.....
	15 and 16 .....	.....	.07	4	5	.....	.....	1.40	.....
Umbrellas.....	4 and under 8..	.01	.01	1	1	1	1.00	1.25	\$1.25
	12 and under 15	.01	.03	1	1	1	1.00	3.00	3.00
	15 and 16 .....	.01	.01	1	2	1	.50	.73	1.45
Handbags and purses....	Under 4 .....	.01	( <sup>1</sup> )	1	1	1	1.00	.15	.15
	4 and under 8..	.09	.02	7	8	9	1.13	.28	.24
	8 and under 12..	.06	.02	5	5	6	1.20	.50	.42
	12 and under 15	.04	.03	4	4	4	1.00	.80	.80
	15 and 16 .....	.09	.09	8	9	9	1.00	1.03	1.03
Jewelry.....	Under 4 .....	.....	( <sup>1</sup> )	1	1	.....	.....	.10	.....
	4 and under 8..	.....	.02	6	6	.....	.....	.32	.....
	8 and under 12..	.....	.06	8	10	.....	.....	.56	.....
	12 and under 15	.....	.04	3	4	.....	.....	1.00	.....
	15 and 16 .....	.....	.08	2	2	.....	.....	3.80	.....
Bloomers, step-ins, and drawers, cotton....	Under 4 .....	0.75	.15	13	15	75	5.00	1.02	.20
	4 and under 8..	1.80	.50	34	40	180	4.50	1.26	.28
	8 and under 12	1.85	.66	35	40	185	4.63	1.65	.36
	12 and under 15	.36	.17	10	12	36	3.00	1.45	.48
	15 and 16 .....	.33	.14	8	9	33	3.67	1.55	.42
Bloomers, step-ins, and drawers, silk or rayon.....	4 and under 8..	.04	.02	1	2	4	2.00	1.00	.50
	8 and under 12..	.03	.02	1	1	3	3.00	1.77	.59
	12 and under 15	.13	.09	3	4	13	3.25	2.13	.65
	15 and 16 .....	.06	.05	2	2	6	3.00	2.58	.86
Nightgowns, cotton....	Under 4 .....	.32	.15	15	17	32	1.88	.86	.46
	4 and under 8..	.33	.18	18	19	33	1.74	.96	.55
	8 and under 12..	.45	.24	18	21	45	2.14	1.13	.53
	12 and under 15	.05	.03	2	2	5	2.50	1.40	.56
	15 and 16 .....	.12	.08	5	5	12	2.40	1.69	.70
Pajamas, cotton.....	Under 4 .....	.03	.01	2	2	3	1.50	.62	.41
	4 and under 8..	.34	.22	12	16	34	2.13	1.40	.66
	8 and under 12..	.15	.12	9	9	15	1.67	1.36	.81
	12 and under 15	.13	.13	6	8	13	1.63	1.58	.97
	15 and 16 .....	.01	.02	1	1	1	1.00	1.69	1.69
Pajamas, silk or rayon..	8 and under 12..	.01	.02	1	1	1	1.00	2.00	2.00
	15 and 16 .....	.02	.02	1	1	2	2.00	2.40	1.20
	Under 4 .....	.02	.02	2	2	2	1.00	1.00	1.00
Kimonos and bathrobes, cotton.....	4 and under 8..	.01	.01	1	1	1	1.00	1.00	1.00
	8 and under 12..	.03	.05	3	3	3	1.00	1.62	1.62
	12 and under 15	.01	.01	1	1	1	1.00	1.45	1.45
	Under 4 .....	1.53	.40	23	25	153	6.12	1.58	.26
Footwear: Stockings, cotton.....	4 and under 8..	4.37	1.19	40	48	437	9.10	2.47	.27
	8 and under 12..	3.60	1.13	34	39	360	9.23	2.90	.31
	12 and under 15	.58	.18	7	9	58	6.44	2.01	.31
	15 and 16 .....	.39	.11	5	5	39	7.80	2.12	.27
	Under 4 .....	.04	.02	2	2	4	2.00	.88	.44
Stockings, wool.....	4 and under 8..	.05	.03	3	3	5	1.67	.98	.59
	8 and under 12..	.16	.08	4	4	16	4.00	2.01	.50
	12 and under 15	.03	.02	1	1	3	3.00	1.50	.50
	4 and under 8..	.07	.03	3	4	7	1.75	.75	.43
Stockings, silk or rayon	8 and under 12..	.24	.15	8	9	24	2.67	1.67	.63
	12 and under 15	.69	.54	9	10	69	6.90	5.41	.78
	15 and 16 .....	.71	.67	8	9	71	7.89	7.43	.94

<sup>1</sup> Less than 1 cent.

## Girls—Continued

Article	Age group	All families (100)		Families purchasing					
		Average num- ber of arti- cles per fam- ily	Average ex- pend- iture per fam- ily	Number of families	Number of child- ren	Articles purchased		Average ex- penditure	
						Number	Average per child	Per child	Per arti- cle
Footwear — Continued									
Shoes, high.....	Under 4.....	.34	\$0.70	14	16	34	2.13	\$4.36	\$2.05
	4 and under 8..	.38	1.03	21	23	38	1.65	4.48	2.71
	8 and under 12..	.27	.55	16	18	27	1.50	3.04	2.02
	12 and under 15	.02	.04	1	1	2	2.00	3.96	1.98
	15 and 16.....	.02	.02	1	1	2	2.00	2.00	1.00
Shoes, low.....	Under 4.....	.23	.35	13	14	23	1.64	2.52	1.54
	4 and under 8..	1.03	2.37	37	45	103	2.29	5.28	2.31
	8 and under 12..	.95	2.84	34	39	95	2.44	7.29	2.99
	12 and under 15	.34	1.25	11	13	34	2.62	9.63	3.68*
	15 and 16.....	.27	1.05	8	9	27	3.00	11.62	3.87
Shoe repairing.....	4 and under 8..	.....	.14	13	14	.....	.....	1.03	.....
	8 and under 12..	.....	.42	22	26	.....	.....	1.62	.....
	12 and under 15	.....	.17	8	9	.....	.....	1.91	.....
	15 and 16.....	.....	.23	7	8	.....	.....	2.94	.....
House slippers.....	Under 4.....	.01	.01	1	1	1	1.00	.85	.85
	4 and under 8..	.11	.08	10	11	11	1.00	.75	.75
	8 and under 12..	.18	.12	16	19	18	.95	.64	.68
	12 and under 15	.05	.04	5	6	5	.83	.73	.88
	15 and 16.....	.08	.07	6	7	8	1.14	1.02	.89
Rubbers.....	4 and under 8..	.05	.05	4	4	5	1.25	1.26	1.01
	8 and under 12..	.02	.02	2	3	2	.67	.55	.82
	15 and 16.....	.03	.04	3	4	3	.75	1.07	1.43
Aprons.....	8 and under 12..	0.02	.01	2	2	2	1.00	.38	.38
	12 and under 15	.01	(1)	1	1	1	1.00	.39	.39
	15 and 16.....	.08	.05	2	2	8	4.00	2.25	.56
Coats, cotton.....	Under 4.....	.02	.07	2	3	2	.67	2.33	3.50
	4 and under 8..	.07	.32	6	9	7	.78	3.55	4.56
	8 and under 12..	.03	.18	3	3	3	1.00	6.00	6.00
Coats, wool.....	Under 4.....	.11	.53	11	13	11	.85	4.07	4.81
	4 and under 8..	.25	1.55	18	22	25	1.14	7.02	6.18
	8 and under 12..	.19	1.58	15	19	19	1.00	8.34	8.34
	12 and under 15	.06	.75	5	6	6	1.00	12.49	12.49
	15 and 16.....	.07	1.03	6	7	7	1.00	14.71	14.71
Raincoats.....	4 and under 8..	.01	.01	1	1	1	1.00	1.00	1.00
	8 and under 12..	.02	.03	2	2	2	1.00	1.75	1.75
	12 and under 15	.01	.01	1	1	1	1.00	1.00	1.00
	15 and 16.....	.03	.13	3	3	3	1.00	4.31	4.31
Sweaters and lumber- jacks, cotton.....	Under 4.....	.05	.05	5	6	5	.83	.82	.99
	4 and under 8..	.10	.12	9	10	10	1.00	1.24	1.24
	8 and under 12..	.09	.15	9	9	9	1.00	1.65	1.65
	12 and under 15	.01	.03	1	1	1	1.00	2.98	2.98
	15 and 16.....	.04	.11	3	4	4	1.00	2.85	2.85
Sweaters and lumber- jacks, wool.....	Under 4.....	.13	.27	11	11	13	1.18	2.45	2.08
	4 and under 8..	.11	.24	10	11	11	1.00	2.13	2.13
	8 and under 12..	.20	.40	16	19	20	1.05	2.10	2.00
	12 and under 15	.08	.18	6	7	8	1.14	2.50	2.19
	15 and 16.....	.04	.10	4	4	4	1.00	2.62	2.62
Sweaters and lumber- jacks, silk or rayon	4 and under 8..	.01	.01	1	2	1	.50	.63	1.25
	8 and under 12..	.01	.02	1	1	1	1.00	2.00	2.00
Underwear:									
Petticoats and slips, cotton.....	Under 4.....	.29	.08	11	11	29	2.64	.71	.27
	4 and under 8..	.96	.40	29	35	96	2.74	1.14	.42
	8 and under 12..	.88	.44	28	33	88	2.67	1.32	.50
	12 and under 15	.34	.23	11	13	34	2.62	1.78	.68
	15 and 16.....	.23	.18	8	9	23	2.56	2.04	.80
Petticoats and slips, wool.....	Under 4.....	.02	.02	1	1	2	2.00	1.50	.75

<sup>1</sup> Less than 1 cent.

Article	Age group	All families (100)		Families purchasing					
		Average number of articles per fam- ily	Average ex- pend- iture per fam- ily	Number of families	Number of chil- dren	Articles purchased		Average ex- penditure	
						Number	Average per child	Per child	Per arti- cle
Underwear — Continued									
Petticoats and slips, silk or rayon . . . . .	4 and under 8 . .	0.01	\$0.01	1	1	1	1.00	\$1.00	\$1.00
	8 and under 12 . .	.07	.08	4	4	7	1.75	2.13	1.21
	12 and under 15 . .	.04	.05	2	2	4	2.00	2.68	1.34
	15 and 16 . . . . .	.04	.04	2	2	4	2.00	2.05	1.03
Corsets . . . . .	15 and 16 . . . . .	.02	.02	1	2	2	1.00	.99	.99
Brassières . . . . .	12 and under 15 . .	.10	.03	3	3	10	3.33	1.00	.30
	15 and 16 . . . . .	.19	.06	7	8	19	2.38	.78	.33
Chemises, cotton . . . . .	4 and under 8 . .	.09	.03	3	3	9	3.00	1.05	.35
	12 and under 15 . .	.02	.01	1	1	2	2.00	.75	.38
	15 and 16 . . . . .	.02	.02	1	1	2	2.00	2.00	1.00
Chemises, silk or rayon	4 and under 8 . .	.01	.01	1	1	1	1.00	1.00	1.00
	8 and under 12 . .	.02	.03	2	2	2	1.00	1.50	1.50
	15 and 16 . . . . .	.01	.02	1	1	1	1.00	1.50	1.50
Union suits, cotton . . .	Under 4 . . . . .	.25	.18	10	12	25	2.08	1.53	.73
	4 and under 8 . .	.99	.92	32	39	99	2.54	2.35	.93
	8 and under 12 . .	.66	.66	25	29	66	2.28	2.28	1.00
	12 and under 15 . .	.06	.06	3	3	6	2.00	1.83	.92
	15 and 16 . . . . .	.10	.08	4	4	10	2.50	2.00	.80
Union suits, wool . . . .	Under 4 . . . . .	.05	.06	2	2	5	2.50	3.00	1.20
	4 and under 8 . .	.03	.03	1	1	3	3.00	3.00	1.00
Union suits, silk or rayon	8 and under 12 . .	.02	.03	1	1	2	2.00	2.55	1.28
Shirts and vests, cot- ton . . . . .	Under 4 . . . . .	.17	.06	6	6	17	2.83	1.02	.36
	4 and under 8 . .	.27	.06	10	10	27	2.70	.62	.23
	8 and under 12 . .	.76	.20	20	25	76	3.04	.81	.27
	12 and under 15 . .	.39	.12	8	10	39	3.90	1.22	.31
	15 and 16 . . . . .	.17	.08	5	6	17	2.83	1.25	.44
Shirts and vests, wool	Under 4 . . . . .	.11	.07	4	5	11	2.20	1.41	.64
Shirts and vests, silk or rayon . . . . .	Under 4 . . . . .	.02	.01	1	1	2	2.00	.50	.25
	4 and under 8 . .	.06	.03	2	3	6	2.00	.83	.42
	12 and under 15 . .	.04	.01	1	2	4	2.00	.70	.35
Cleaning, pressing, and repairing . . . . .	8 and under 12 . .	.....	.06	4	4	.....	.....	1.44	.....
	12 and under 15 . .	.....	.02	2	2	.....	.....	1.08	.....
	15 and 16 . . . . .	.....	.15	4	4	.....	.....	3.81	.....
Infants' wear (not speci- fied above) :									
Rompers . . . . .	Under 4 . . . . .	.03	.02	1	1	3	3.00	1.60	.53
Underwaists . . . . .	Under 4 . . . . .	.18	.04	6	6	18	3.00	.70	.23
	4 and under 8 . .	.06	.01	3	3	6	2.00	.35	.18
	8 and under 12 . .	.02	( <sup>1</sup> )	1	2	2	1.00	.20	.20
Other infants' wear . . .	Under 4 . . . . .	.....	.29	5	6	.....	.....	4.84	.....
Other clothing . . . . .	Under 4 . . . . .	.....	.10	7	8	.....	.....	1.26	.....
	4 and under 8 . .	.....	.08	4	4	.....	.....	1.88	.....
	8 and under 12 . .	.....	.02	3	4	.....	.....	.57	.....
	12 and under 15 . .	.....	.01	1	1	.....	.....	1.00	.....
	15 and 16 . . . . .	.....	.01	1	1	.....	.....	1.00	.....
Total, girls' clothing	Under 4 . . . . .	.....	4.93	.....	.....	.....	.....	.....	.....
	4 and under 8 . .	.....	14.32	.....	.....	.....	.....	.....	.....
	8 and under 12 . .	.....	16.01	.....	.....	.....	.....	.....	.....
	12 and under 15 . .	.....	6.36	.....	.....	.....	.....	.....	.....
	15 and 16 . . . . .	.....	6.82	.....	.....	.....	.....	.....	.....

<sup>1</sup> Less than 1 cent.

The above tables show how little clothing is purchased by the majority of people — hardly enough to meet the necessities of

covering the body and keeping warm. There is a demand for more clothing at prices within the income of the average family.

**Children's Clothing.** The average expenditure for clothing for children amounted to \$87.78 per year for the 100 families and constituted 5.1 per cent of all expenditures. This expenditure clothed an average of 2.45 children per family.

**Summary.** People spend from 10 to 15 per cent of their income for wearing apparel. About 70 per cent of the clothing income is used for outer clothing, 20 per cent for underclothing, 5 per cent for accessories, and 5 per cent for care and repairs.

**Budgets.** Since the wife usually controls most of the family expenditures, she must know how to distribute the income to cover all necessary items, such as rent, food, clothing, as well as the incidental expenses for sickness, pleasure, self-improvement, etc. In other words, she must be able to get one hundred cents out of a dollar. This task is very difficult in a family of limited income and requires the coöperation and encouragement of the husband and other members of the family.

The following forms have been worked out by the John Wanamaker stores in the interest of personal service to consumers. They represent the experience of many years in encouraging people to live according to a budget.

Whether the family is composed of a husband and wife and relatives, or the family in its full meaning of including a child or children, it is essential that a partnership should exist to make the budget successful.

SUGGESTED FAMILY BUDGET

	Annual Income \$2400 to \$5000	Annual Income \$6000 to \$10,000
Shelter (rent, taxes, int. on mortgage, upkeep, etc.).....	24% — \$576-1200	25% — \$1500-2500
Maintenance (gas, electricity, service, telephone, minor replacements).....	15% — \$360-750	15% — \$900-1500
Food .....	20% — \$480-1000	17% — \$1020-1700
Clothing .....	17% — \$408-850	15% — \$900-1500
Advancement (church, charity, education, health, etc.) and Recreation .....	14% — \$336-700	13% — \$780-1300
Savings (life insurance, saving accounts, investment securities, permanent home equipment) .....	10% — \$240-500	15% — \$900-1500
	100% — \$2400-5000	100% — \$6000-10,000

BUDGET SHEET

Annual Income \$ \_\_\_\_\_

Income Tax \$ \_\_\_\_\_

Net Income \$ \_\_\_\_\_

*Estimated Expenditures*

	Annual	Monthly	Weekly		Annual	Monthly	Weekly
SHELTER Rent or Taxes Water Insurance on house Interest on mortgage Repairs on house Commutation ticket				SAVINGS ( <i>apply as required</i> ) Payments on Home Savings bank Building and Loan Association Life insurance Securities New equipment Thrift clubs Other savings			
MAINTENANCE ( <i>running expenses</i> ) Coal and wood Oil Gas Electricity Telephone Service Laundry Fees Insurance on house- hold goods; Fire, Burglary, etc. Household supplies Minor replacements				EXTENSION <i>Advancement and Recreation</i> Church and donations Gifts; Christmas, general Clubs, societies, lodges Educational Reading matter Entertainment Diversion			
FOOD Milk Ice Meat and fish Fruit and vegetables Groceries Meals out Kitchen garden ( <i>Credit supplies re- ceived</i> ) Entertainment where not elsewhere provided				Health Health fund or Doctor Dentist Oculist Hospital or nurse Drug store Vacation fund ( <i>excess over regular expenses</i> ) Insurance; <i>Health and Accident</i>			
CLOTHING Divide allowance amongst family ( <i>use Wanamaker Clothing Budgets</i> ) Cleaning Repairs Accessories				General Automobile; <i>includ- ing garage, license, insurance, chauffeur</i> Landscape gardening Traveling expenses Personal allowances— <i>each member of the family for</i> Carfare Postage Stationery Casual reading mat- ter Incidentals Man's lunches  Forward from first column  Total			

Budgets for single persons include many types : the independent and self-supporting man or woman, the widow who often is reduced to a lower income, the widower, single young people who may or may not contemplate marriage.

SUGGESTED BUDGETS FOR A SINGLE PERSON

	Incomes Approximating \$1200	Incomes Ranging from \$2400 to \$5000
Board and Lodging — including lunches and car-fare .....	55% — \$660	45% — \$1080-2250
Clothing — including laundry, pressing, and repairing .....	20% — \$240	18% — \$432-900
Advancement and Recreation .....	15% — \$180	17% — \$408-850
Savings .....	10% — \$120	20% — \$480-1000
	100% — \$1200	100% — \$2400-5000

WANAMAKER FOUR STEPS CHART FOR THE WEEKLY INCOME

Study \$45 Example		Alter Example to Suit Your Own Case	Plan Your Own	
Income	Expense		Income	Expenses
\$ 7.		I. SAVINGS FUND Life Insurance Health Fund Vacation Fund Other Savings		
	\$ 2.			
	\$ 1.			
	\$ 1.			
\$18.	\$ 3.	II. MONTHLY BILLS Rent, including heat Gas and electricity Clothing		
	\$12.			
	\$ 1.			
	\$ 5.			
\$14.		III. HOME MAKER'S ALLOWANCE Food Laundry Incidentals Advancement and recreation		
	\$12.			
	\$ 1.			
	\$ 1.			
\$ 6.		IV. HOME EARNER'S ALLOWANCE Luncheons Carfares Incidentals Advancement and recreation		
	\$ 5.			
	\$ 1.			
	\$45.			

What per cent is spent for (a) accessories, including gloves, (b) underclothing, including hose, (c) protective clothing, (d) “dress” clothing in the following table?

HOME WOMAN'S CLOTHING BUDGET

*On \$200 per Year, Over a Period of Three Years Totaling \$600*

Article	1st Year	2d Year	3d Year	Total
<b>COATS</b>				
1 winter .....	\$50.00	.....	.....	\$50.00
1 spring .....	.....	\$25.00	.....	25.00
<b>SUITS</b>				
1 spring .....	.....	.....	\$35.00	35.00
<b>DRESSES</b>				
5 cotton morning or porch dresses, 3 at \$3.75, 2 at \$2.50 .....	3.75	7.50	5.00	16.25
6 house dress aprons at \$1.85 .....	3.70	3.70	3.70	11.10
3 silk dresses, 1 at \$35, 2 at \$25 .....	25.00	35.00	25.00	85.00
2 afternoon or evening gowns at \$29.50 .....	.....	29.50	29.50	59.00
1 summer voile at \$12 .....	12.00	.....	.....	12.00
<b>HATS</b>				
3 spring at \$5.50 .....	5.50	5.50	5.50	16.50
1 sport .....	.....	.....	4.00	4.00
3 winter at \$7.50 .....	7.50	7.50	7.50	22.50
1 dressy .....	.....	10.00	.....	10.00
<b>SHOES</b>				
3 pr. oxfords at \$6.50 .....	6.50	6.50	6.50	19.50
1 pr. slippers .....	7.50	.....	.....	7.50
3 pr. canvas at \$5.00 .....	5.00	5.00	5.00	15.00
1 pr. spats .....	.....	.....	2.50	2.50
1 pr. overshoes .....	.....	4.50	.....	4.50
2 pr. rubbers at \$1.25 .....	.....	1.25	1.25	2.50
1 pr. bedroom slippers .....	.....	.....	1.50	1.50
<b>GLOVES</b>				
4 pr. chamoisette, \$1 .....	1.00	2.00	1.00	4.00
1 pr. kid .....	3.00	.....	.....	3.00
1 pr. winter .....	.....	3.50	.....	3.50
1 pr. silk .....	.....	.....	2.00	2.00
<b>SWEATERS</b>				
3 wool, or 2 wool and 1 fiber .....	3.50	3.50	3.50	10.50
<b>UNDERGARMENTS</b>				
9 envelope chemises .....	4.50	4.50	4.50	13.50
9 vests at 50 cents .....	1.50	1.50	1.50	4.50
6 union suits at \$1 .....	2.00	2.00	2.00	6.00
6 nightgowns, winter, at \$1 .....	2.00	2.00	2.00	6.00
6 nightgowns, summer, at \$1 .....	2.00	2.00	2.00	6.00
4 sateen slips at \$1 .....	1.00	1.00	2.00	4.00
1 washable slip .....	3.95	.....	.....	3.95
2 silk slips .....	.....	3.95	3.95	7.90
6 brassières at 50¢ .....	1.00	1.00	1.00	3.00
3 corsets .....	3.00	3.00	3.00	9.00
1 kimono .....	.....	3.00	.....	3.00
1 bathrobe .....	.....	.....	5.00	5.00
<b>HOSE</b>				
3 pr. at \$1.65 .....	1.65	1.65	1.65	4.95
15 pr. at 75¢ .....	3.75	3.75	3.75	11.25
4 pr. at \$2.25 .....	4.50	2.25	2.25	9.00
<b>ACCESSORIES</b>				
1 fur .....	25.00	.....	.....	25.00
3 bags .....	3.00	3.50	3.50	10.00
2½ doz. handkerchiefs .....	1.50	3.00	3.00	7.50
	\$194.30	\$188.05	\$179.55	\$561.90

**The Clothing Budget.** Clothing and other wearing apparel should be selected very carefully by the consumer in terms of (a) inventory of present clothing, (b) earning power, (c) social position, (d) business position, (e) the occasion or intended use for the wearing apparel. There are times when it is economical to purchase cheap clothing; there are other times when it is economical to purchase medium or high-priced wearing apparel.

System is the keynote of economical dressing. It has been discovered that sane thrift is especially lacking in woman's dress. It is obvious to all thinking people that economy in the purchase and up-keep of the wardrobe is possible only when the expenditure is controlled by a clothing budget. If the planning of clothing expenditures were more uniformly adopted, men and women would not only know how to spend well, but also how to dress well.

The advantages of a budget are :

1. It promotes saving. The passing desire for a certain article may have gone by the time the budget is adjusted to permit the purchase.

2. If one needs to count the cost of each garment, more thought is apt to be put upon the selection of clothing.

3. One shops with a definite aim, knowing exactly what one needs and how much one can spend.

4. It permits one to take advantage of true bargains by anticipating one's needs.

5. It prevents waste of money at so-called "bargain counters," and the buying of goods marked "at reduced price."

6. It will aid one to distinguish between "first class quality" and high price, so that one will have a knowledge of the correct value of materials.

7. It will teach that economy does not mean getting the most for as little money as possible regardless of the suitability or character of the goods.

8. The wardrobe is assembled more carefully so that each costume is complete, that is, one buys things which can be worn together.

9. It saves time as well as money.

Because of the unlimited character of our wants in regard to clothing it is obviously impossible to purchase every piece of

wearing apparel that we might desire. We must decide on those items that will give us the greatest satisfaction and happiness and limit our purchases to the amount a person in our income class can spend for clothing. Life is made up of choices and decisions, in matters of clothing as well as other matters.

These decisions should be the result of a careful analysis of what one already has in the way of wearing apparel, which requires an inventory of all clothing on hand. After weighing the advantages and disadvantages of various types of new clothing, the sum of money available can be distributed wisely to supplement the existing wardrobe.

**Suggestions for Economical Selection.** The girl or woman who spends a moderate and limited sum for her clothes can be very attractively clothed if her garments are well chosen. The person who possesses a few carefully selected, well-made garments of style and material that will look well as long as the garments hold together always appears well dressed. For planning and buying clothing the following suggestions may be helpful :

1. Inventory the wardrobe, attic, and clothes closet carefully before planning to buy, and know what is really needed.

SUGGESTIVE OUTLINE FOR GENERAL INVENTORY

On Hand	Needed this yr.	To be purch'd	To be repaired	Cost new	Cost repair
1 coat 2 blouses .....	..... 3 blouses 1 suit	..... 1 blouse 1 suit	1 coat 2 blouses .....	..... \$2.25 30.00	\$1.00 .50 .....

2. With income and past expenditure as a basis, make a detailed plan or clothing budget of the anticipated articles needed and the amount of expenditure for the coming year, or if possible for the next three years. Twenty per cent of the total income is a high allowance for clothing.

The following lists of wearing apparel are presented to show the various articles that one may need to have in the wardrobe. Wearing apparel varies in (a) style, (b) composition, (c) use or occasion, and (d) price, so that one can always select the article that will meet his or her needs and prevalent style tendencies at a price within the income.

## CLOTHING LIST FOR WOMEN, MISSSES, GIRLS

## CLOTHING LIST FOR MEN, YOUTHS, BOYS

	I	II	III	IV		I	II	III	IV
	Num- ber Pieces	Total Cost	No. Yrs. Wear	An- nual Cost		Num- ber Pieces	Total Cost	No. Yrs. Wear	An- nual Cost
<b>OUTER WRAPS</b>					<b>OUTERWEAR</b>				
Winter Coat.....					Fur-Lined Coat...				
Summer Coat.....					Winter Coat.....				
Raincoat.....					Summer Coat.....				
Evening Wrap....					Raincoat.....				
Cape.....									
<b>SUITS</b>					<b>SUITS</b>				
Winter.....					Business.....				
Summer.....					Evening.....				
<b>FURS</b>					Tuxedo.....				
Coat.....									
Neckpiece.....					<b>SEPARATE GARMENTS</b>				
<b>DRESSES</b>					Extra Trousers...				
Evening.....					Smoking Jackets..				
Silk.....									
Cloth.....					<b>SPORT CLOTHES</b>				
Sport.....					Suits.....				
Wash.....					Sweaters.....				
<b>SPORT CLOTHES</b>					Shirts, Wool.....				
Suits.....					Riding.....				
Capes.....					Bathing Suit.....				
Sweaters.....									
Skirts.....					<b>UNDERWEAR</b>				
Blouses.....					Dressing Gown...				
Middy.....					Bathrobe.....				
Scarfs.....					Shirts, Cotton....				
Bathing Suits....					Shirts, Silk.....				
Riding Habit.....					Pajamas.....				
<b>UNDERWEAR</b>					Night Shirts.....				
Vests.....					Vests.....				
Knickers.....					Drawers.....				
Step-Ins.....					Union Suits.....				
Combinations....					B. V. D.'s.....				
Chemises.....					Boys' Blouses....				
Brassières.....									
Corsets.....					<b>HATS</b>				
Nightgowns.....					Felt.....				
Pajamas.....					Silk.....				
Petticoats.....					Straw.....				
Costume Slips....					Caps.....				
Negligees.....									
Bathrobes.....					<b>SHOES</b>				
<b>HATS</b>					High.....				
Winter.....					Oxford.....				
Summer.....					Pumps.....				
Sport.....					Spats.....				
<b>SHOES</b>					Slippers.....				
High.....					Goloshes.....				
Oxford.....					Rubbers.....				
Pumps and					Scout.....				
Strapped.....					Sneakers.....				
Evening.....					Rubber Boots....				
Corrective.....									
Goloshes.....					<b>SOCKS</b>				
Rubbers.....					Wool.....				
Spats.....					Cotton.....				
Bedroom Slippers.					Silk.....				
					<b>GLOVES</b>				
					Kid.....				
					Wool.....				

	I	II	III	IV		I	II	III	IV
	Num- ber Pieces	Total Cost	No. Yrs. Wear	An- nual Cost		Num- ber Pieces	Total Cost	No. Yrs. Wear	An- nual Cost
STOCKINGS					ACCESSORIES				
Silk.....					Umbrella.....				
Wool.....					Walking Sticks...				
Cotton.....					Mufflers.....				
GLOVES					Handkerchiefs...				
Kid.....					Collars.....				
Fabric.....					Ties.....				
Silk.....					Belts.....				
ACCESSORIES					Garters.....				
Umbrella.....					Suspenders.....				
Handkerchiefs....					MISCELLANEOUS				
Scarves.....					Cleaning.....				
Handbag.....					Pressing and Re-				
Aprons.....					pairs.....				
Hairnets.....					Jewelry.....				
General.....					TOILET ARTICLES				
MISCELLANEOUS									
Cleaning.....									
Repairs.....									
Materials.....									
Seamstress.....									
Milliner.....									
Jewelry.....									
TOILET ARTICLES									

Every person has individual requirements as to clothing. No arbitrary price list will exactly serve any two people. Figures are therefore omitted and a plan presented whereby the annual clothing allowance of each person in a family may be computed with accuracy by the individual. To use this list:

1. Check in Column II all articles of every sort necessary to complete your clothing equipment for a full year and also for three years. Many articles may last three years — coats, etc.
2. Note in Column I the required number of each article.
3. Enter in the space checked the total sum which you consider reasonable to pay for these particular garments.
4. In Column III fill in the number of years you expect the garments to serve.
5. In Column IV compute from preceding entries the annual cost of each item.
6. The total of the entries in Column IV will be the proper amount to allot for clothing in making out your annual income apportionment.

To show the uses of clothing that may be developed, let us consider the clothing for a young lady at college during the fall. We may enumerate: (a) formal afternoon costume — frock, etc., (b) schoolroom costume, (c) dinner costume, (d) campus-wearing costume — blouse, etc., (e) swagger suit, (f) less formal evening gown, (g) all-around utility coat with fur trimmings, (h) football costume, (i) formal suit; with shoes appropriate for costumes: (1) sport, (2) town, (3) theater or opera, (4) evening sandals.

The same process of selection can be used in selecting a wardrobe for a particular purpose, such as for an extended trip, when the simpler the costume and the fewer the pieces of luggage, the better.

**Intelligent Purchasing of Clothes.** The following hints will be found useful in purchasing clothing:

1. Plan to purchase only the essentials, carefully omitting all the non-essentials.

2. In replacing articles choose materials and garments which will harmonize with the rest of the wardrobe. It is best to limit the number of colors.

3. Choose good materials for garments that are to receive hard wear, such as suits, everyday coats and dresses, shoes, stockings, etc. Know the correct cost of materials. Some materials have been fairly well standardized, are reliable, attractive, in good taste, and never go out of style. Examples: Wool serge, broadcloth, twilled flannel, crêpe de chine, pongee, china silk, gingham, percale, flaxon, and dimity.

4. One good garment outwears two cheap ones and will be presentable throughout that period of service.

5. Avoid novelties and fads. Buy standard materials.

6. Estimate amounts before buying.

7. Buy clothes after the rush season, as advance styles are always expensive.

8. See that clothes satisfy your needs rather than your wants.

9. Buy clothing that is conservative in style, good in color and line, appropriate to the use to which it is put, and suited to the individual. Such garments can be worn as long as the materials last without making over.

10. Plan to save on summer clothes so as to have plenty for more expensive winter garments.

11. Select simple underwear, saving both the initial cost and cost of laundering.

12. Select garments that will serve two purposes, if possible, and do not buy two hats, coats, or dresses, that serve the same purpose.

13. Every woman who demands good material, conservative styles, and good workmanship helps to develop industries that turn out high-grade products in every line.

The cost of any material or garment depends on the quality of the fibers that make up the fabric, on the weave and finish, on the color and design, and last but not least on fashion. Good colors that are fast and good designs add to the cost of materials. But fashion often plays the leading rôle among the factors that enter into the price of cloth. At the end of the season, all the fashionable fabrics are often greatly reduced in price. The retailer must make what he can out of them before they are passé. Good quality in a color that has been popular in the past season may be obtained at a low cost. The price is not necessarily an indication of the quality. At the beginning of a season, the price is due to the prevailing fashion, and women too frequently sacrifice quality for a transient style, and the cost of clothing takes a large per cent of the family income.

At the same time one should avoid selecting a garment or a material which will not be in fashion the next year. Seasonal garments, fabrics, and accessories that have been so popular as to become a fad, or those which have been worn so long that the demand for them is gradually decreasing will probably not be worn the corresponding season next year. One may, however, safely buy clothing and accessories at reduced prices at the end of a season when their economic life of utility is over because of changing seasons in case it will be renewed when the corresponding season returns.

Consumers in times of depression are inclined to accept poor construction of fabrics in order to secure a lower price. In other words, quality-desire changes to price-desire on the part of the consumer. Thus a nationally advertised line of shirting with a construction of  $128 \times 68$ 's (that is, 128 warp and 68 filling threads to the inch) competes with other shirts containing  $152 \times 80$ , all retailing at \$1.95. Of course, it is assumed that the make, cut,

and trim are approximately the same. The advertised line is selling at a higher price than the shirting with a construction  $152 \times 80$ .

There are many articles of wearing apparel and other textiles that are branded or named, of which the manufacturer has had the name copyrighted. In such a case the government has given him a monopoly in its manufacture and sale. Such articles are usually widely advertised. Of course, the manufacturer of the branded article can not compel the consumer to buy, hence we should not think of branded or named articles as having monopolistic prices that are forced upon the consumer.

**Economical Consumption.** Wearing value and the ability to prolong it are important factors in the discussion of economy of clothing. Correct care of garments lengthens the period of usefulness and saves expenditure for new clothing. The following suggestions will aid in prolonging the life of clothing.

General Care: 1. Hang where garments will not fade.

2. Keep the closet or wardrobe clean.

3. Keep the clothing free from spots and stains. Insect pests attack soiled spots first.

4. Brush thoroughly at intervals. Brushing restores nap, removes dust, and reduces the amount of cleaning required.

5. Use bags or protectors to keep dust and moths from garments not worn every day.

6. Catch any broken stitches and darn or patch a hole at once.

If the garments are to be packed away or stored, they should be cleaned and brushed thoroughly first and packed as nearly air tight as possible. The purpose of the thorough brushing is to remove all moths and eggs. When the garment is thoroughly clean, it should be wrapped up in such a way that the moths can not reach it. This can be done in the following ways:

1. Sew up in strong brown wrapping paper.

2. Use newspapers as wrappers. They can be used in the same way though they are more likely to tear than wrapping paper.

3. Use pasteboard boxes, sealed with strips of gummed paper. They are very successful.

4. Use paper bags, which are for sale for storage purposes.

Brushing and careful wrapping are the most successful moth preventives. If the garment has not been well brushed and

carefully wrapped, the odor of camphor, cedar, or other similar substances will not keep the moths out. If the clothes are clean, free of moth eggs, and well packed, however, the addition of some anti-moth substance will aid.

Linens and cottons should be laundered with care and folded away without being starched or ironed. Household linen or cotton should have the stains removed and be put away without starch, for the starch causes the material to turn yellow.

Furs should be placed out of doors and combed and brushed with the greatest care so that both moths and eggs may be removed. If furs are cared for early in the spring and placed in mothproof bags, there is little danger. Another precaution should be against heat. It is never wise to place furs in a hot attic because the pelt becomes so dry that it can not resist strain. If furs can not be placed in a commercial storage vault it is wiser to keep them at room temperature or in the coolest closet in the house.

**Trade-Marks.** The use of trade-marks, labels, guarantees, and standards when buying clothing is important. The existing guides to the selection of fabrics which the consumer may use are limited and inadequate. The type of examination possible in a store is only for those things which can be detected by the senses, thus many important characteristics of cloth can not be determined, and price can not be used as a measure of quality.

At the present time the consumer's safest guide is to buy from a reliable merchant. Some stores and mail order houses have installed textile-testing laboratories where goods purchased for the store are scientifically tested so that the store knows exactly what guarantees and claims can be made for the material. In some cities textile-testing laboratories are supported by merchants who send materials to them for testing. The information thus procured is available to the members of the store staff and upon request to the consumer.

Some manufacturers guarantee their products for certain qualities, such as fiber content, laundering qualities, absence of weighting, or other adulterants. These guarantees should be specific rather than general. If the garment or fabric does not bear a brand or label giving this information, the intelligent sales person should, upon request, give this information to the consumer.

Standards for raw textile fabrics have been set up by the government, and certain standards and definitions have also been set up by the Federal Trade Commission. Some manufacturing organizations, too, have developed and established standards for use in their own industry.

The American Home Economics Association and the Bureau of Home Economics in Washington, in coöperation with some other organizations, have been carrying on research and investigation with a view to setting up standards for certain textile products. In only a few cases, however, do these standards actually function in the selection of textiles and clothing. This is partially due to lack of information and demand by the mass of consumers. When the consumers know what standards have been set up, where to get reliable information concerning them, how to interpret those standards, and by experience learn the value of using them when purchasing textile products, then will the manufacturers be forced to furnish such information on labels placed on their products.

**Consumer's Protection.** In order to protect the consumer, various attempts have been made to have laws passed compelling all manufacturers to label fabrics or clothing with information regarding the composition of the fabric, costume, etc., in a manner similar to the labeling of the composition of food products. Thus far no success has been attained in this direction, although all consumers should support such a measure.

Since the manufacturer is very clever in making fabrics look much superior to what they really are and since it is difficult for women to secure much knowledge in regard to the matter, it is really necessary that purchasers of fabrics be protected by the law just as the purchasers of foods are. That such a condition is possible is evidenced by the fact that England has a British Merchandise Mark Act that has been in successful operation for thirty-three years.

Consumers in some parts of the country have organized an association called the Consumers' League, which publishes a list of firms with the names of fabrics and costumes that measure up to standards of durability, etc., and also either approves or disapproves of the wages and working conditions under which the articles are manufactured. Well-established firms or mills that

manufacture fabrics and wearing apparel have recognized the value of establishing standards for their product.

Thus in the purchase of wearing apparel the consumer is protected by the Consumers' League, by trade names, and by the good name of a well-established firm.

**Need of Coöperation.** We have seen that the price that the consumer pays for wearing apparel is based upon production and exchange costs. Therefore, in order that the price may be as economical as possible, it is necessary to have economical production and exchange. This can be done only when the consumer coöperates with both the producer and the exchange agencies to eliminate such abuses as too rapid change of styles, purchase of foreign-made goods, cancellation of orders, returning of goods, labor difficulties causing a shut-down, wasteful advertising, etc.

The consumer should also be willing to pay a price that will permit a living wage to clothing workers as well as a fair profit to the manufacturers. He should realize, in addition, that we owe a debt of gratitude to clothing and textile manufacturers as well as to the workers for the progressive development in machinery and new processes that have placed artistic, well-made clothing within the reach of all classes.

**Cast-Off Clothing.** When a working man or woman is without a job, the first expense to be cut from the budget is clothing. Savings and borrowings must be kept for food and shelter. After weeks or perhaps months of unemployment the wardrobe is reduced to things that can't be pawned — a few shabby garments not presentable in looking for work.

Hence clothing that has been discarded should be carefully dusted, pressed, and given to a charity organization for distribution to one without a job or to some other needy person. Since the original owner has satisfied his wants out of the clothing he naturally has lost interest in it and is willing for some one else to have it. The economic life of the garment is thus lengthened considerably.

Money spent for purchasing and renovating clothing for the poor and those in distress may reduce the amount of capital to be used for industry, but we must consider the fact that it raises the standard of living in clothing among the poor and needy, gives them more self-respect and dignity, and betters the condition of

those unemployed so that eventually they may become better workers and better members of society. Therefore, all cast-off garments should be carefully bundled and sent to the Red Cross or to charity bureaus, where they may be distributed.

During the depression of 1931, a clothing relief committee was organized as one of the major bodies of the Emergency Unemployment Relief Committee. Through this committee, hundreds of distressed families in New York were outfitted so that they could face the everyday exigencies of life with self-respect. Men and women, because of the aid given them, were able to go forth in search of employment, and children were able to go to school. Within a year the committee sent out some 30,000 articles for the use of between 5000 and 6000 families.

**Uses for Discarded Materials.** All textile materials represent an investment of money; that is, the cost of raw material, labor of manufacture, and transportation. There is a definite use for all textiles, even in the most worn-out condition. If any of this material is destroyed, it must be replaced from another source.

Woolen, cotton, and linen rags have many uses in the household and in commerce:

1. Worn-out parts of knit underwear, stockings, etc., make rag rugs, stove cloths, dustless dust cloths and mops, and fillings for hot-dish pads.

2. Worn-out sheets, pillow cases, and parts of muslin underwear, after laundering, may be cut into strips and rolled for bandages or rag rugs. Small and irregular-shaped pieces make dressings.

3. Pieces of silk make the best cloths for polishing furniture.

4. Parts of old linen table cloths may be recut for table napkins; small pieces may be sterilized and used for bandages.

5. Old blankets, if all wool, may be sent back to the factory and for a small sum they will be recarded, respun, and woven into new blankets.

6. Pieces of woolen goods, percales, gingham, etc., may be used for patchwork quilts and comforts.

7. Scraps of woolen and cotton material should be packed separately and sold, the wool for the manufacture of shoddy, the cotton for the manufacture of paper.

8. Old newspapers are valuable in paper mills.

## QUESTIONS

1. What is meant by (a) consumption ; (b) conservation?
2. Why is consumption of clothing an important subject to all of us?
3. What is meant by the popular meaning and technical meaning of *utility* applied to clothing?
4. What is meant by the expression *marginal utility* as applied to clothing?
5. Explain the meaning of the expression *marginal consumer* as applied to those purchasing wearing apparel.
6. Explain the meaning of *consumers' surplus* applied to the purchaser of clothing.
7. What is meant by the price of wearing apparel? How are prices fixed?
8. What is meant by (a) normal, (b) inflated, (c) deflated prices applied to clothing?
9. Do high prices always mean the finest in quality?
10. Do the prices of wearing apparel change? If so, explain.
11. What is meant by the term *price index* as applied to wearing apparel?
12. Explain some one system of retail price index.
13. What is meant by the expressions: (a) falling market, (b) consumers' market, (c) buyers' market, (d) sellers' market?
14. Explain the meaning of demand for clothing.
15. Have all our demands for clothing ever been satisfied?
16. Explain briefly the laws of consumption applied to clothing.
17. Explain the economics of low-price wearing apparel.
18. Should we throw away our cast-off clothing or give it to the needy and poor?
19. Explain a method of distributing cast-off clothing in times of distress or need.
20. What is meant by *thrift* applied to clothing?
21. What are the steps in selecting or purchasing wearing apparel?
22. Describe the necessity of coöperation between manufacturers and consumers.
23. How is the consumer protected in his purchases of clothing?
24. What determines the utility of clothing?
25. The marginal consumer and the marginal producer determine the price of clothing. Explain.
26. Why has the tendency been toward "cheap" wearing apparel?
27. In the purchase of clothing what five things should the consumer take into consideration?

- 28. How can we curb our tendency to buy clothing to satisfy a whim?
- 29. If you were a tall slender person and you wished a fur that would serve for business and dress, what kind should you choose? Would a short stout person look well in the same fur?
- 30. Explain economical consumption.
- 31. What steps have been taken to protect the purchaser of wearing apparel?
- 32. Would further laws be advisable?
- 33. Is it to the individual's advantage to "boycott" cheaply made clothing?

PROBLEMS

- 1. The weekly income of a family in the West was \$20. The following budget was used per week: Food, \$7.75; clothing, \$3.00; shelter, \$5.10; operating expenses, \$2.10, and the rest for advancement. (a) How much was used for advancement? (b) What per cent of the total income was used for each item? (c) Can you make suggestions for improvement?
- 2. A family of five — three children under 14 — have an income of \$1412. The following amounts were spent per year: Food, \$581; clothing, \$190; shelter, \$353.93; operating expenses, \$148.40; advancement and other incidentals the remainder. (a) What amount was used for advancement? (b) What per cent for each factor in the budget?
- 3. A family of ten spends the following amounts for clothing per year:

	<i>Annual Expenditure</i>		<i>Annual Expenditure</i>
Woman at home.....	\$28.35	Boy 10-16 years old...	\$30.00
Man at work.....	37.50	Girl 6-10 years old....	18.50
Girl at work.....	54.00	Boy 6-10 years old....	25.00
Boy at work.....	54.50	Child 1½ to 5 years old..	14.35
Girl 10-16 years old...	25.50	Infant to 1½ years old..	10.40

- 4. A family of five has the following budget per year: Clothing — man, \$61.22; wife, \$64.37; boy 11, \$45.13; girl 5, \$29.43; boy 2, \$25.82. What is the income, approximately? What per cent of the total income was devoted to the clothing of each person of the family?

5. Experts have stated that the budget figures of the average family, particularly for clothing, may be reduced five per cent by good management. Do you believe this statement is true? If so, enumerate some of the devices that might be used by more efficient management.

6. The budgets of the following families are presented :

<i>Number in Family</i>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Food . . . . .	\$462.96	\$538.32	\$613.32	\$677.64
Clothing . . . . .	206.68	251.11	295.54	339.97
Shelter and house operation	437.37	481.50	537.49	658.69
Miscellaneous . . . . .	444.01	466.21	484.86	498.89

What per cent is devoted to each item? Are these budgets for city or rural communities?

7. A family of five has the following budget : Clothing — man, \$95.32; wife, \$111.36; boy 11, \$54.21; girl 5, \$43.19; boy 2, \$35.89.

What per cent of the total income is devoted to each item?

8. Four families have the following monthly budgets :

<i>Number in Family</i>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Savings . . . . .	\$65.00	\$56.00	\$50.00	\$40.00
Food . . . . .	40.00	50.00	55.00	60.00
Shelter . . . . .	70.00	70.00	70.00	70.00
Clothing . . . . .	35.00	40.00	45.00	50.00
Operating . . . . .	30.00	30.00	30.00	30.00
Advancement . . . . .	60.00	55.00	50.00	50.00

What is the total income of each family? What per cent of the total income is devoted to each item? Is the budget for a rural or city community?

9. Four families have the following monthly budgets :

<i>Number in Family</i>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Savings . . . . .	\$55.00	\$45.00	\$40.00	\$35.00
Food . . . . .	40.00	45.00	50.00	55.00
Shelter . . . . .	60.00	60.00	60.00	60.00
Clothing . . . . .	30.00	35.00	40.00	40.00
Operating . . . . .	25.00	25.00	25.00	25.00
Advancement . . . . .	40.00	40.00	35.00	35.00

What is the total income of each family? What per cent of the total income is devoted to each item? Are the budgets of a professional or tradesman's family?

10. Five families have the following monthly budgets :

Savings.....	\$65.00	\$100.00	\$125.00	\$175.00	\$200.00
Food.....	75.00	75.00	85.00	100.00	100.00
Shelter.....	85.00	100.00	125.00	125.00	150.00
Operating.....	50.00	65.00	80.00	100.00	100.00
Clothing.....	50.00	60.00	70.00	75.00	100.00
Advancement.....	75.00	100.00	115.00	125.00	150.00

What is the total income of each family? What per cent of the total income is devoted to each item?

11. Four families have the following monthly budgets :

<i>Number in Family</i>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Savings.....	\$40.00	\$35.00	\$30.00	\$25.00
Food.....	35.00	40.00	45.00	50.00
Shelter.....	50.00	50.00	50.00	50.00
Clothing.....	25.00	27.00	30.00	32.00
Operating.....	18.00	18.00	18.00	18.00
Advancement.....	32.00	30.00	27.00	25.00

What is the total income of each family? What per cent of the total income is devoted to each item? Are the budgets for rural or city community? What per cent is devoted to each child in the budgets with children?

12. Consider the following budgets :

<i>Number in Family</i>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Savings.....	\$25.00	\$20.00	\$15.00	\$11.00
Food.....	30.00	37.00	44.00	50.00
Shelter.....	38.00	38.00	38.00	38.00
Clothing.....	20.00	23.00	25.00	26.00
Operating.....	12.00	12.00	13.00	13.00
Advancement.....	25.00	20.00	15.00	12.00

13. Study the following budgets for individuals :

Savings.....	\$7.00	\$10.00	\$20.00	\$30.00	\$45.00	\$60.00
Room and two meals . . .	35.00	44.00	50.00	56.00	65.00	76.00
Luncheons.....	9.00	9.00	10.00	12.00	15.00	18.00
Laundry.....	3.00	4.00	5.00	5.00	5.00	7.00
Clothing.....	15.00	18.00	20.00	22.00	30.00	40.00
Advancement.....	11.00	15.00	20.00	25.00	40.00	50.00

What is the total income of each individual? What is the per cent of the total income in each item?

## CHAPTER V

### DEVELOPMENT OF THE PRODUCTION AND MANUFACTURE OF TEXTILES

**Systems.** Since the day of our first parents there has been more or less demand for some kind of wearing apparel. The various ways of meeting these demands for clothing may be considered roughly in relation to the four stages of industrial development: (1) the agricultural or household stage, (2) the handicraft stage, (3) the domestic system, and (4) the factory system.

**Agricultural or Household Stage.** Man first lived in caves or in the open and secured his food and clothing by hunting the wild beasts. Later, families began to group together and goats, sheep, and other animals were domesticated and raised on large areas of land. This first period is called the hunting and the second the pastoral period. During the hunting period, protection against wild beasts and a supply of food constituted man's chief needs. His clothing consisted of the skins of animals from which the hair had not been removed. The skin was freed of flesh and exposed to the sun and air for preservation. During this exposure, it was subjected to beating to prevent its becoming hard and stiff. The beating also gave smoothness to the skin. After this curing process the skin was thrown over the left shoulder and draped about the body in an oblique position, so that the right arm and shoulder were left free. The skin extended to cover the front and back of the thighs for purposes of modesty. When the early travelers went to the mountains, smaller pieces of skins were used to cover the breast and protect the lungs. In colder climates, of course, the entire body, with the exception of the face, was covered by furs. The various portions of the skins were held together by thorns, which took the place of pins.

During the hunting stage of existence men moved from place to place in search of the necessities of life, and made no attempt to cultivate the soil or to produce any goods other than those that

were present in a natural state. Hence during this early period there was no industry or exchange of goods. Each family secured its own food, skins for clothing, etc. During the pastoral stage, when domestic animals were kept, large areas of land were required, and there was a tendency to use captives as slaves to assist in the labor. There was still very little trading, and each family or group supplied its own needs. The agricultural period of the pastoral stage began when man tried to cultivate the soil, which marks the beginning of a social life and of a permanent civilization. Almost everything except luxury products was made in the household. At first the skins were used for mats, wall coverings, and bed coverings, as well as clothing, and later the fibers of plants and animals were spun and woven or pressed into fabrics. For this reason, the name of the household system has been used to describe the methods of manufacture and industry that prevailed from a period of antiquity to the early part of the Middle Ages. At some time during this early pastoral existence man learned the first use of textiles and invented the processes of spinning and weaving.

**Textile Processes.** Since originally all textiles and clothing were made in the home, the processes for making cloth, thread, etc. were naturally invented in the home. Amid toil and romance, in front of the fireside, the slow devices for making thread and clothing were based upon home operations, such as the combing and braiding of the hair. In other words, the original conceptions of spinning, weaving, knitting, braiding, etc. were all invented by the women. Money was scarce, the country was impoverished, and the women were obliged to perform the operations of spinning, knitting, and weaving during practically all their leisure time, even when they were entertaining their neighbors. All of which must have stimulated every one to use his best efforts to improve the methods of working and the quality of the product.

The motions through which the raw material passed were developed by practice into a technique that has given us remarkable examples of textiles. As time went on, the men adopted mechanical movements in the form of hand devices for performing spinning, weaving, knitting, and braiding, but the original conception was by the women.

While the men spent most of their time hunting, the women began improving their personal appearance, which meant arranging their hair in appropriate form, making their fur clothing attractive by fringes, etc. In arranging the hair, which naturally was long, came the idea of removing the oil and perspiration, and arranging the matted loose hair into attractive forms at the back of the head. This involved the use of the hand in twisting the hair back, followed by both fine and coarse teeth combing. The idea of braiding by means of finger manipulation followed.



SPINNING WHORL

One of the earliest devices used for spinning

**Spinning.** The first notion of spinning came from pulling and twisting the hair into strands or smaller thread-like formations. From the habit of playing with the hair to make it more attractive came the desire to take the loose wool torn from the sheep's back and twist it into thread to use to hold together the different parts of the skins composing the clothing. Of course, the first forms of threads were crude and did not resemble to any great degree the finished thread of today. But nevertheless the principle involved was the same.

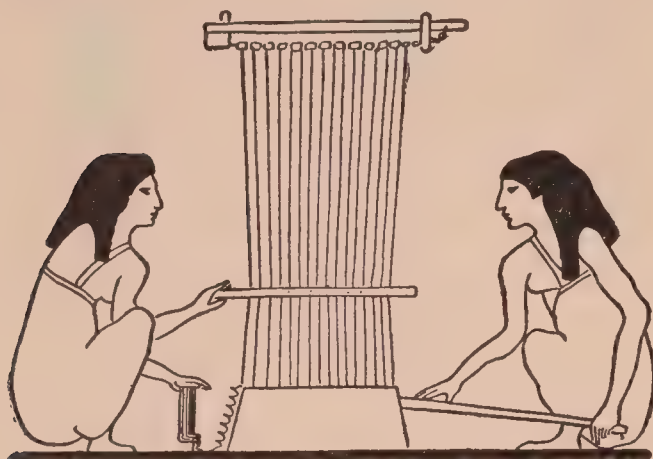


SPINSTER, DISTAFF, AND SPINDLE

The desire for thread and yarn for home use became so great that the women spent much of their time in making some kind of thread. The slow and constant repetition of pulling and twisting developed in the arms, hands, and fingers a habit of great precision and technique. Generation after generation of practice in this task must have prompted many to use their

strength and technique to best advantage by the aid of a simple mechanical device, called the distaff or spindle. The distaff was

a cleft stick about three feet long, on which was fastened a quantity of wool, cotton, or flax to be spun. The lower end of the distaff was held between the left arm and the side, so as to leave the hands at liberty to draw the thread and manage the spindle,



AN ANCIENT LOOM  
From an Egyptian monument

the fibers from the bunch of raw material being drawn out and twisted into a thread by the fingers of the right hand. As the thread was formed, it was wound on a suspended spindle. The person using the distaff and spindle was called a spinster.

The exact date at which spinning was invented is unknown, but from earliest times

man clothed himself, first in skins and later in cloth made from spun and woven wool.

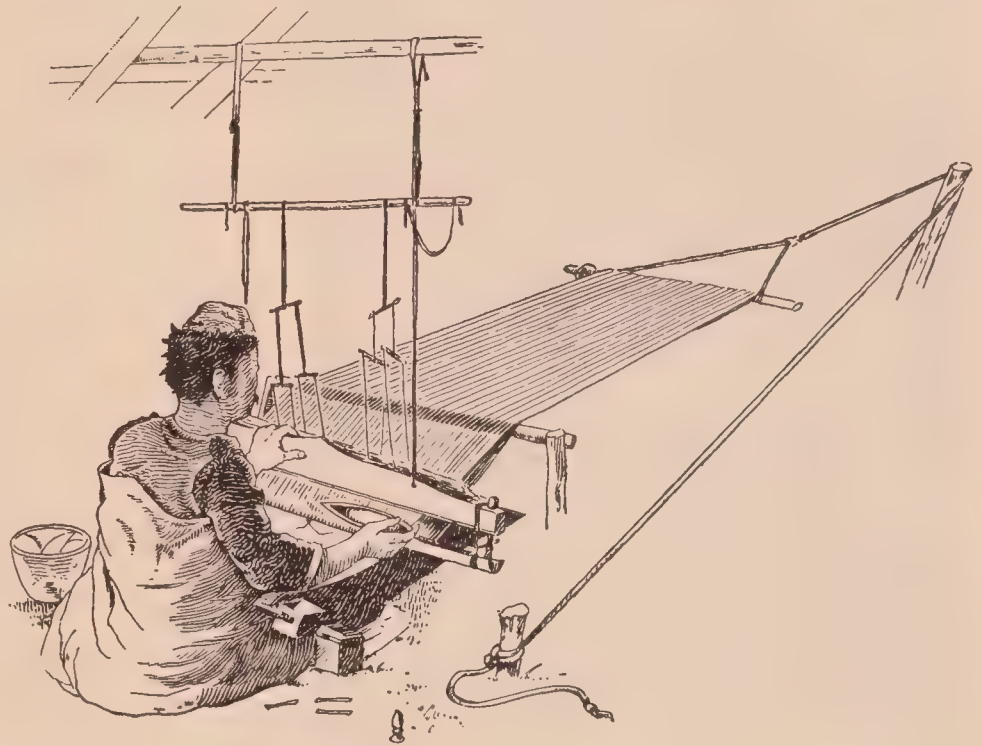
How many centuries elapsed before the improvement reached the perfection of the distaff and spindle can not be ascertained. It is certain that in reaching this point the inventive genius of mankind seemed to have exhausted itself in that direction, for thousands of years passed by before another forward movement was effected, and we find that all the nations of antiquity used the distaff and spindle to form their threads.

**Weaving.** The invention of weaving is clouded in the mystery of antiquity, but no doubt it was conceived by the women at home, which accounts for the fact that it seemed to be known by all early nations. It is so old that it is closely related to the history of mythology.

According to Pliny, the Assyrians believed Queen Semiramis to have been the inventress of weaving. Minerva, in many pieces of ancient statuary, is represented with a distaff, evidently for the purpose of conveying the impression that it was she who first taught men the art of spinning. This honor is given by the Egyptians to Isis; by the Mohammedans to a son of Japeth; by the Chinese to the consort of their emperor, Yas; and by the Peruvians to Mamcella, wife of Manco-Capac, their first sovereign.

These traditions serve to carry the invaluable art of spinning and weaving back to an extremely remote period — thousands of years, no doubt, prior to the writing of the first book. According to Melik Cassam Mirza, of Tabriz, Persia, the weaving of silk was first practiced in China, in the province of Kiang Nau, about the year 2257 B.C.

It is altogether likely that this art was invented, and brought to a high state of perfection at different periods, by nations of people not only widely separated but totally unknown to each other. Whether spinning or weaving was invented first is now hopelessly beyond discovery, though the conjecture may be hazarded, with a great probability of truth, that it was the latter.



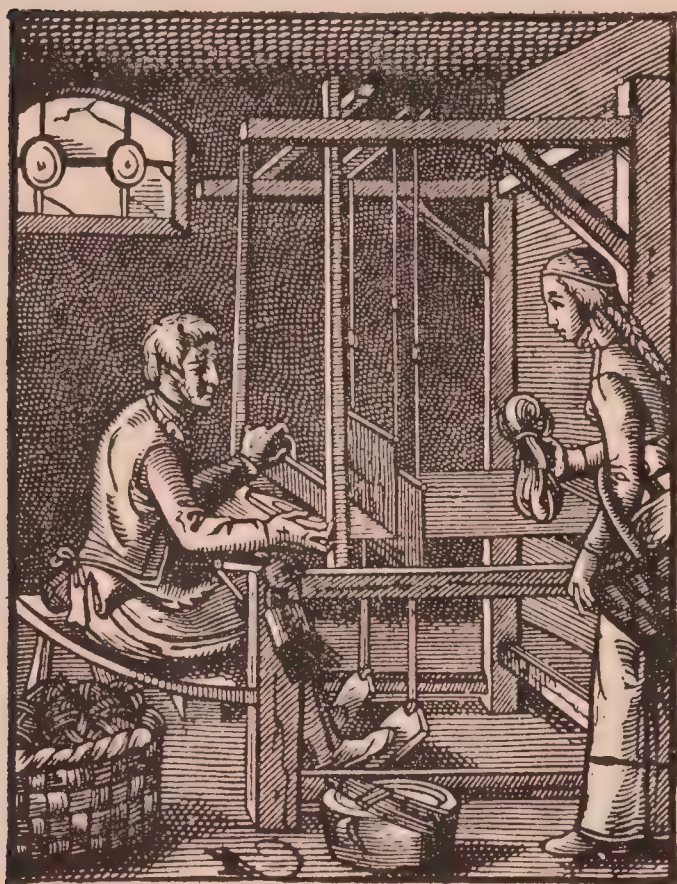
PRIMITIVE LOOM OF INDIA

Such looms are used in India today

In primitive times the art of weaving was of the simplest character. The weaver spun a single length of yarn and wound it into a ball; then he stuck two sticks in the ground and to these affixed crosspieces, from which he stretched his warp; next he interlaced a second thread (the weft) by a simple process of darning, pressing the weft as tightly together as he desired by the aid of his fingers. For long ages we may believe that little progress was made in the art. In time, however, certain ancient nations — notably the Peruvians of South America, and the Egyptians and the Chinese of the Old World — attained great skill, though the instruments they possessed showed little advance from that described above. India for many centuries enjoyed a high reputation for the variety, beauty, and fineness of her woven textures; all these were wrought

with the simplest tools, the threads being spun by the distaff and spindle or the single-thread wheel, and the shuttle being passed through the open warp from hand to hand.

The methods of weaving practiced today by the Navajo Indians is the same employed by the hand weavers of India and China, and



LOW-WARP LOOM OF THE 16TH CENTURY

is virtually identical with the method that has been used from the beginning by primitive weavers. The warp is stretched between two parallel poles suspended between upright posts, and the weft or filling threads are drawn in and out of the warp with a rude wooden needle, somewhat like a fisherman's needle, and beaten together with a stick. Seated upon the ground and with no pattern except that in the mind's eye, geometric designs and quaint figures are worked in the fabric with threads of beautiful colors.

Upon such a loom are woven

the beautiful blankets and rugs that are considered durable and artistic today.

**Felting.** Felting was discovered when primitive man observed that the wool on the inside of his skin garments for warmth gradually became matted together. The parts of the garments which received the most pressure or rubbing became felted first. Thus men finally learned that if they placed layers of wool on a mat, wet it, trod on it or rolled it and beat it, the fibers became firmly and permanently closely felted together. This made a soft, stout, lightweight fabric which served many needs.

**Materials for Clothing.** During the earliest stage of existence man obtained his clothing from the skins of wild animals. He contributed nothing to the development of the animals and lived

a hand-to-mouth existence. This method of obtaining a raw material for clothing — wild silk (tussah silk) — is used today. The wild silkworm develops among the oak trees of China and India and is simply collected by the natives.

When man began to tame wild animals,— goats and sheep, — his supply of skins for clothing became more constant and he was able to live in larger groups, because he could depend upon a constant supply of skins from his domesticated flock. He no longer lived from hand to mouth but moved from place to place only for better pasturage, and had much leisure time. This method of raising raw material for clothing exists today among the nomadic people of the hills of India and Arabia, and some Indians of the United States.

During the agricultural stage man chose a permanent abode and fertilized and tilled the ground so as to increase the productiveness of the soil. More people could live on a definite area of land during this period than during the previous periods.

During the hunting and pastoral stages of civilization, woman became acquainted with many plants which she adapted to her need for baskets, nets, ropes, and carriers of various kinds. She learned how to extract the fibers and how to prepare them for use. During the agricultural period the seeds of many of these plants were planted, and the fibers such as cotton (seed fibers) and linen (stem fibers) were used for clothing. The women found that these fibers were cooler than wool, easier to wash, and could be artistically colored. Later man began to improve in the use and the decoration of his clothing for both himself and his family. He learned how to improve the stock so that special grades of fineness, etc. of wool would develop. He also learned to remove



THE COMMON FLAX  
PLANT

the fleece each year, and to take the fibers to the home, where the women washed, carded, and spun the wool. In some cases they dyed it with the coloring matter of plants and wove fabrics for mats, rugs, and clothing for the children and women, and later for the men.

**Linen.** The origin of the manufacture of linen is traced back to times lost in the twilight of fable and many centuries before the Christian era. There is no other textile that has such a history. No one knows at what point of primitive life the savage found the wool of his sheep preferable to its pelt, nor just when linen came like a new dispensation over that. The use of flax reached perfection at an early age in India, Egypt, and Babylon.



FLAX GATHERING

From an ancient monument at El Kab, Egypt

It was probably from the Egyptians that the Hebrews learned many of their linen-weaving secrets. The splendid hangings of the tabernacle in the wilderness, as well as the priests' robes, were of shining linen, and the high priest's girdle was of linen so curiously made as to suggest a snake's skin. These robes were afterwards unraveled to make wicks for the sacred lamps. The mufflers and veils and turbans that made the picturesque toilet of the Hebrew women were all of linen; and it was fine linen that always moved the imagination of their poets. Solomon, it is said, had veils and hangings of the softest linens wrought with exquisite devices; and the Egyptian princess who was his wife brought from her home robes of linen whose sheer gauze was wonderfully embroidered.

The Egyptians were remarkably skillful in the manipulation of flax, producing linen fabrics far exceeding in fineness any cloths that may at present be spun and woven by the most improved mechanical inventions. The decorations of their temples show the kinds of implements used in the cultivation of flax, the treatment of the fiber, and the processes of spinning and weaving. Their mummy wrappings show that with their crude appliances and simple methods this ancient people could produce a linen cloth much finer than any that can now be made. One piece of linen

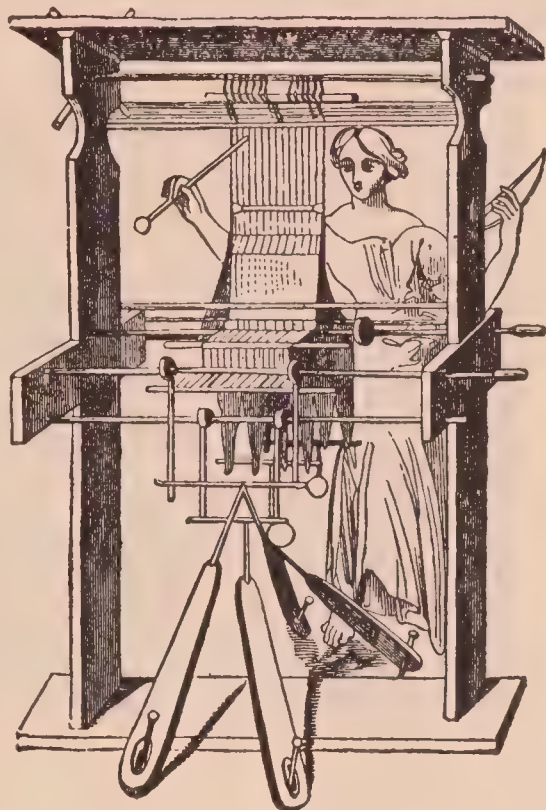
cloth wrapped about an Egyptian mummy has 540 warp threads to the inch; while the finest ever spun and woven in Europe has only 350 threads per inch.

The Phoenicians did much to extend the culture of flax and the art of weaving linen. Their ships plowed the Atlantic more than three thousand years ago, even journeying to Britain, for they were a nation of traders. There is every reason to believe that the Chaldeans excelled in spinning and weaving flax, while the Babylonians, centuries before Christ, were noted for their luxury and the high state of development of their textile art. They manufactured fabrics of flax, cotton, and wool.

In ancient Greece there was a distinct linen industry with slaves as operatives, as well as a household industry; for in both the cottage and the palace a special room was set apart for the occupation of weaving.

In Homeric times maids and matrons of high degree were familiar not only with weaving but also with spinning and embroidery. As in Greece, so in Rome also there were regular linen establishments, and at the same time a domestic manufacture practiced by maids and matrons. Wool was earlier used for clothing by the Romans; then linen was employed, first for domestic uses and later as a dress material, the women adopting it long before the men.

The knowledge of linen manufacture was carried from Egypt into Greece and Rome. In Rome the industry was fostered and encouraged by the emperors, but the principal supply was brought from Egypt. The Romans considered it beneath their dignity to engage in any pursuit except war, and Cicero condemned all trades as "mean and sordid, only to be carried on successfully by means of lying." Many of the old Roman families regarded linen itself as too luxurious and effeminate, and clung to their woolen robes long



GREEK AND ROMAN METHOD OF WEAVING

after the rest of the world wore the softer fabric. Pliny, the Roman historian, speaks with mild contempt of the ladies beyond the Rhine, whose best wear was linen; but in the proper seasons it has remained choice wear from then till now, the world over.



STACKS OF FLAX IN BELGIUM

Ovid speaks of the priests of Rome as wearing linen, and probably the lawn of the Anglican bishop is the legitimate successor of that linen.

**Cotton.** The origin of the cotton plant is shrouded in mystery, but it seems to have been indigenous in India, Africa, and America. We know that it was grown and made into cloth of unsurpassed fineness and beauty many hundred years before Christ, though it did not reach Europe until about A.D. 900. The Greek historian Herodotus, who was born 484 B.C., wrote of the fleeces which surpassed those of sheep in beauty.

Columbus found the natives of America wearing cotton garments and using hammocks made from cotton cord. Cortez and Pizarro found cotton cloth of surprising quality and beauty manufactured in Mexico and Peru. Some cotton cloth, beautiful in design and color, has been found in ancient Peruvian tombs. Early explorers found natives of South Africa wearing garments made of cotton.

The Moors first introduced cotton into Spain and from there the use gradually spread over Europe. Cotton cloth was manu-

factured in Venice, Milan, and other Italian cities during the sixteenth century.

After the sixteenth century cotton goods and cotton were imported from India to all parts of Europe. European merchants and traders who imported cotton goods, spices, and silks amassed great fortunes and became very powerful. The East India Com-

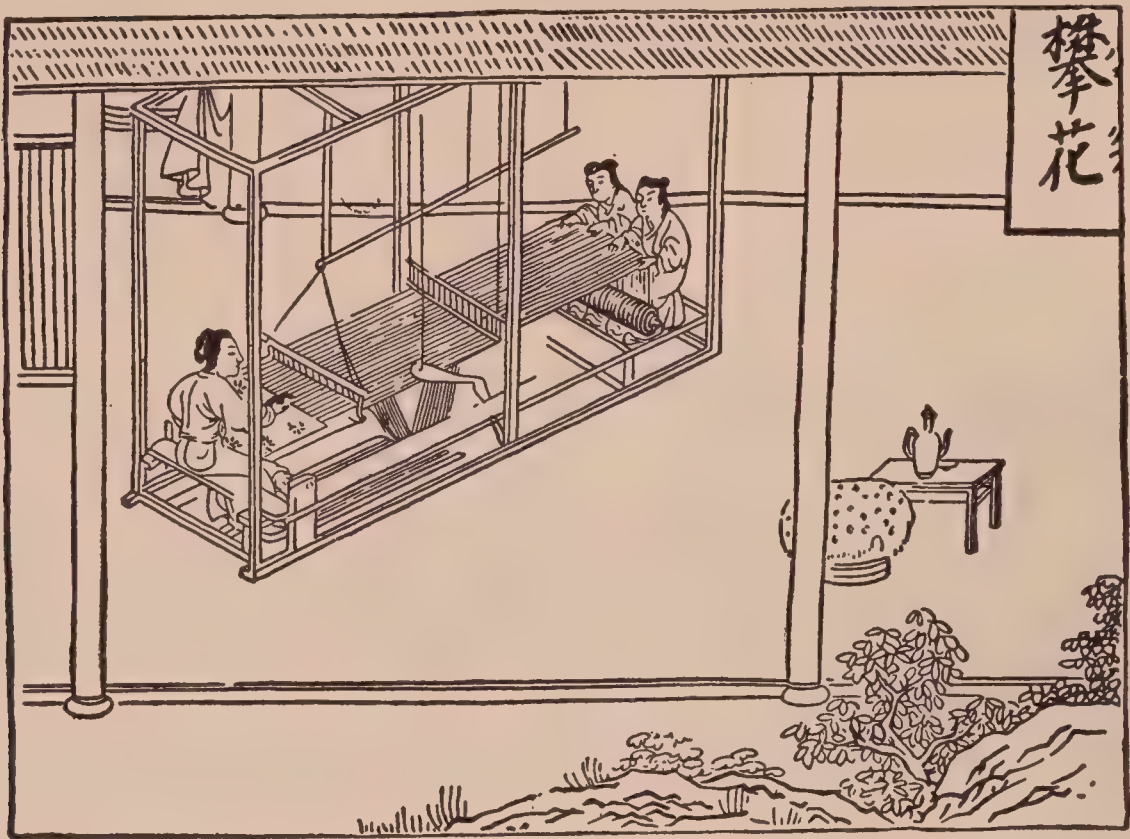


SILKWORMS AND COCOONS

pany, sanctioned by the King of England, practically controlled the English trade.

**Silk.** The immediate offspring of our first parents having subdued the sheep and learned how to make use of its wool, and another branch of the family, known as the Egyptians, having discovered and been the first to cultivate flax, which they used as a textile material on account of the blossom resembling the ethereal blue of the heavens, it remained for descendants of Noah, the Chinese people, to discover and develop the cultivation of the silkworm. It is in keeping with the eternal fitness of things that the discovery of the utility and excellence of the material derived from the silkworm should be traceable to a woman in the person of See-ling-chi, wife of Hoang-ti, emperor of China 2700 years before the Christian era. According to the written records of China, it was this empress who, with her own royal hands, first unraveled the cocoons and wove the glossy filaments into a web of glorious sheen. She is now worshiped throughout the Mongolian empire as the "goddess of silkworms," and at her annual festival the reigning empress performed the ceremony of feeding the worms.

The Chinese guarded well the secret of their valuable art, and on account of their vigilant jealousy many centuries elapsed before the



WEAVING PATTERN — CHINA, A.D. 1210



DYEING SKEINS — MEDIEVAL CHINA

culture spread beyond the country of its origin. Not only did this people have a monopoly of the manufacture for many years, but so far as can be learned they successfully prevented the shipment of silkworms out of the empire, so that the material composing the

fabrics imported from thence by the Romans was a matter of curiosity and conjecture. It was supposed that silk was made from fleeces growing upon trees, or from flowers, tales evidently founded on slender facts connected indiscriminately with cotton, wool, and flax.

To make a pound of raw silk requires from 2500 to 3000 cocoons, each cocoon furnishing a filament of perhaps 600 yards in length.



REELING RAW SILK IN JAPAN

Thus, if the cocoons were reeled separately, which, because of their fineness, is practically impossible, it would require about 1,800,000 yards or a thousand miles of single silk filament to weigh a pound.

The raising of silk is distinctly hand work and no machinery has been able to replace the hand work effectively. Hence the work must be done in countries where hand labor is cheap. To illustrate, even today the wages are as follows: In Italy the girls may get as high as 40 to 60 cents a day for eight hours' work. In Japan they work from 5 o'clock in the morning to 5 o'clock at night, though one hour is taken out for tea and meals. For these 11 hours of labor they receive from 25 cents to 45 cents a day. Both in Italy and Japan the women who do reeling at home earn only about half of these amounts.

During the long period in which the Chinese retained exclusive knowledge of sericulture the price of all silk stuffs was equivalent pound for pound to their weight in gold. Notwithstanding the excessive cost of silk and the restraints otherwise put on its use, the trade grew.

Silk fabrics were so costly that only nobility could purchase them. To illustrate: The Emperor Aurelian (A.D. 273) refused to allow his wife to buy a silk shawl, because it was priced at literally its weight in gold. In the sixth century, during the reign of Justinian (518–527), silk had become an article of very general and quite indispensable use. At this time the raw silk used in Europe was still being imported from China, by way of Persia.

Silk culture was considered so highly that even the noble families there could engage in it without degradation. Through Venice the industry was carried to other parts of Italy, and in the next century spread so that by 1300 there were several thousand engaged in it at Florence, and it was highly important in other cities such as Genoa, Modena, and Bologna.

The care of raising silkworms has been developed to a point where it is a science called sericulture.

**The Feudal Period.** In Europe for several centuries the people were usually divided into classes — the nobility, possessing many serfs and slaves, and the free men. Each family produced whatever was required in the way of clothing, food, shelter, etc. The wealthier members of society began to accumulate land and capital and depended upon the services of their slaves and the serfs attached to their land to perform all the labor of producing goods that were utilized by the household or manor house. This was part of the feudal system.

Under this system the land was held by lords under grant from the king. Attached to each lord were the various tenants of the village and surrounding land. These tenants were of various grades, from the slave to the freeman. The villeins or serfs were attached to the soil, in that they were not permitted to leave and were required to cultivate the land held by the lord. They were not really slaves, however, because they had certain holdings of land in their own right and could not be sold away from these

holdings. Nevertheless, they were dependent upon the lord to a large extent and served him in various ways.

The manor was a self-reliant household, raising all the food, manufacturing the clothing, tools, etc. There was practically no trade and no wage system. Most of the labor was agricultural in character, but there was some specialization in the way of crafts, such as blacksmithing, milling, spinning, and weaving, etc. The manor was the economic unit during the feudal period, and was in turn superseded by the town.

**Rise of Handicrafts.** As members of communities began to find that they could do certain operations in the making of yarn (spinning), cloth (weaving), clothes (tailoring), and shoes (shoemaking) better than others, they began to specialize and to do this work for others besides their own family. Then this work was no longer done in the home of the consumer. The worker bought his raw materials, bought and used his own tools, manufactured the product, and sold it to the consumer. Practically all goods were made to the order of the purchaser. This was the beginning of the handicraft period, and with its rise trades began to separate.

The feudal ages in England and on the continent are representative of the industrial life of such a civilization. After the breakdown of the feudal system, which had almost disappeared from England by the end of the 16th century, we find that the development of craft specialization went on at a rapid pace and the handicraft stage of production replaced the old household system.

Today we have only a few tradesmen, such as the tailors, dress-makers, and cobblers, who follow this method of production. The old-fashioned methods of shoemaking and repairing illustrate the way work was performed during the handicraft stage.

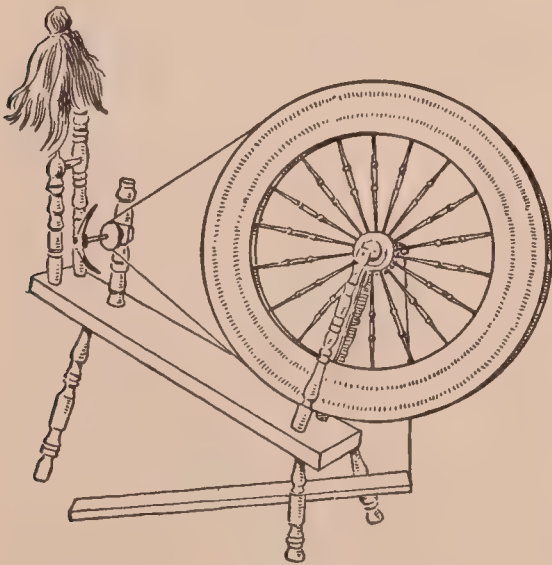
**Westward Trend of Industry.** As civilization passed from the east to the west, Asia and Egypt gave to Greece and Italy the knowledge of spinning, weaving, etc. Italy and Greece used the information and then taught Spain, France, and Flanders (Belgium) the art of weaving wool and cotton.

Later Germany received the textile arts — spinning and weaving — and passed them on to England and northeastern Europe, so

that by the tenth century the English were spinning and weaving the wool from their flocks with much skill, although not equal to the French and Flemish.

With the invasion of William the Conqueror, 1066, came a large immigration from France, that settled in the part of England opposite the Irish coast. The new immigrants, and later ones during Queen Elizabeth's period, increased the skill of the weaving and laid the foundation of the great textile centers of England — Lancashire and Yorkshire.

**Spinning Wheel.** Spinning by distaff and spindle was the only means of producing a textile thread through the long period of thousands of years; so long, indeed, that mankind seemed to have settled down to the conclusion that there could be no other method. But with the development of the specialization of spinning and weaving came a desire to improve on the methods. Workmen with skill in this special work soon began to apply mechanical movements to the processes of spinning and weaving so they could utilize their energy to maximum capacity. Out of this desire came the invention of the spinning wheel and larger looms. The exact date at which the one-thread wheel was introduced is in some doubt and uncertainty, though it is comparatively a modern inven-

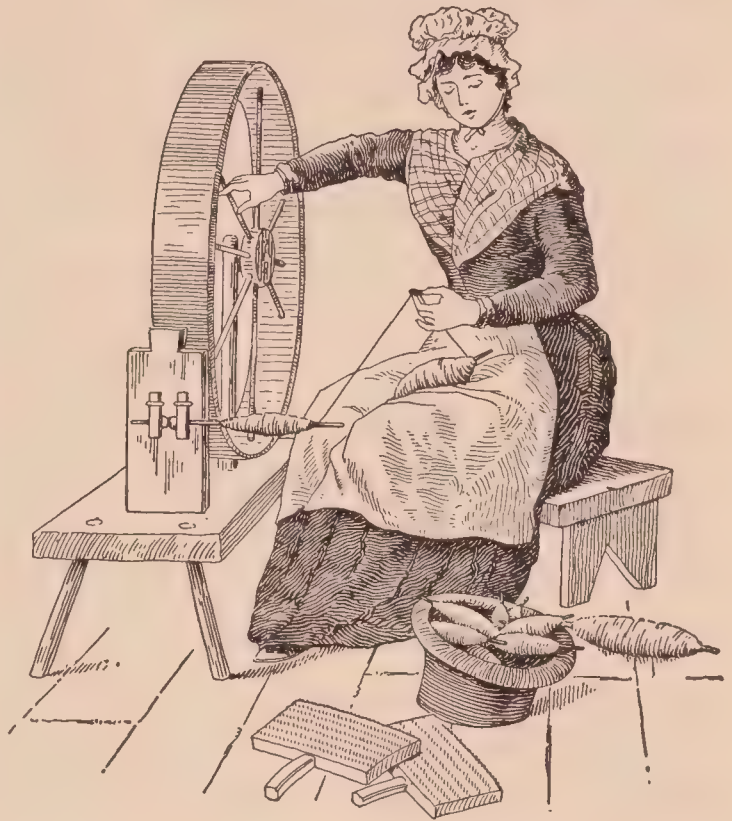


SPINNING WHEEL FOR FLAX

tion. The one-thread wheel enabled the spinner to produce seven times more yarn than by the distaff. This method of spinning came into general use in Europe at the latter end of the 15th century, or at the beginning of the 16th, and continued to be the most expeditious mode of spinning, both in that country and America, till the Hargreaves jenny appeared in 1764. Two kinds of household spinning wheels were used in the old days, according to the variety of

fiber to be spun. The first was known as the "big wheel" or "wool wheel," because of the magnitude of its rim and the fact that it was used in spinning sheep's wool. The second was known as the "flax wheel" and was smaller in size.

The formation of a thread by means of these one-thread spinning wheels represented two independent operations. First, the large, loose, spongy strand of fiber turned off from the hand card was drawn out slightly into a smaller strand called a "roving." This roving was next drawn out and twisted into a fine, solid thread. The two operations were very similar; in each case the spinster, after having attached the end of the roving to the spindle, seized it a few inches from the end with the finger and thumb of the left hand, and while she drove the wheel with the right in order to make the spindle revolve, she slowly stretched the coarse strand by drawing her hand from near the spindle to the position in which it is placed in the accompanying illustration.



SPINNING A THREAD OF WOOL

She next completed the torsion by turning the wheel in the opposite direction, and wound the thread on the spindle into a conical shape called a "cop." Yarn produced in this way could be used for both warp and weft. Only one thread could be spun at a time by this method, but the main operations carried out on the old spinning wheel — drawing, twisting, and winding, — have their exact reproductions in the monster spinning machines of the modern factory.

**Draw Loom.** During the Dark Ages of Europe, a great improvement in weaving seems to have been invented in the East. This was the draw loom, which made much easier the repetition of a pattern. The principle made use of was to divide the number of threads of the warp into as many equal sections as the number of times the pattern was to be repeated in a width of the goods, and fasten all the similarly numbered threads of each section to one cord. When this cord was drawn, all the corresponding threads

would be lifted at once. At that time a helper was necessary to draw the cords governing the warp, but this was later done by machinery.

**Beginning of Marketing.** The craftsman, such as the weaver, always produced more than he required and exchanged the product of his labor — cloth — for the product of another person's labor, such as food. Thus we see that in this period we have the beginning of commerce — the exchange of goods — and the development of a group of middlemen who carry on trading. They purchased the products of the various craftsmen and relieved them of the necessity of finding a market for their own product.

Since the system of bartering or direct trading of one kind of goods for another has many disadvantages, there arose the necessity for a medium of exchange which would serve as a basis for trading. Thus early in the handicraft stage we find the beginnings of the use of money as a medium of exchange.

During this stage we find the rapid development of cities, particularly in the northern parts of Italy. The cities became centers of certain types of manufactured commodities, such as velvet fabrics. Since there was a division of labor, the workers naturally clustered together so they could easily exchange goods. Many of the workers in the cities became wealthy and purchased their freedom from the feudal lords. The serfs ran away from the country sections to the cities, where they were free after a certain length of time. Gradually workmen began to band together and form guilds.

**The Guilds.** As communities became larger and cities sprang up, industry became more than a family concern. Thus we find that in the textile industry group production soon began to supplant individual workmen. There was a demand for better fabrics, and to meet this demand it became necessary to have a large supply of different parts of looms. The small weaver, who owned and constructed his own loom, was not able to have all these parts, so he began to work for a more prosperous weaver. The same conditions applied to spinning, which in time came to be carried on by a class distinct from the weavers. As a result, the small weaver was driven out by the growth of organized capital, and a more perfect organization, called the guild system, arose. By this system, the

textile industry was carried on by a small group of men called masters, employing two, three, or more workers (distinguished later as journeymen and apprentices). The masters organized associations called guilds and dominated all the conditions of the manufacture to a far greater extent than is possible under present conditions.

These craft guilds were in some respects like the modern trade union, but were made up of independent craftsmen and hence were much more powerful. Their chief function was to protect each other and to secure honest workmanship. Their regulations were very strict, and none but guild members were permitted to carry on work in the town. A system of apprenticeship was introduced to limit the number of qualified craftsmen and to insure thorough training. Conditions of work were regulated, remuneration was determined, and style and quality of work were fixed by the guilds. Children of members were looked after and taken care of until they reached the age to enter the guild. Each guild had its own building in the various cities.

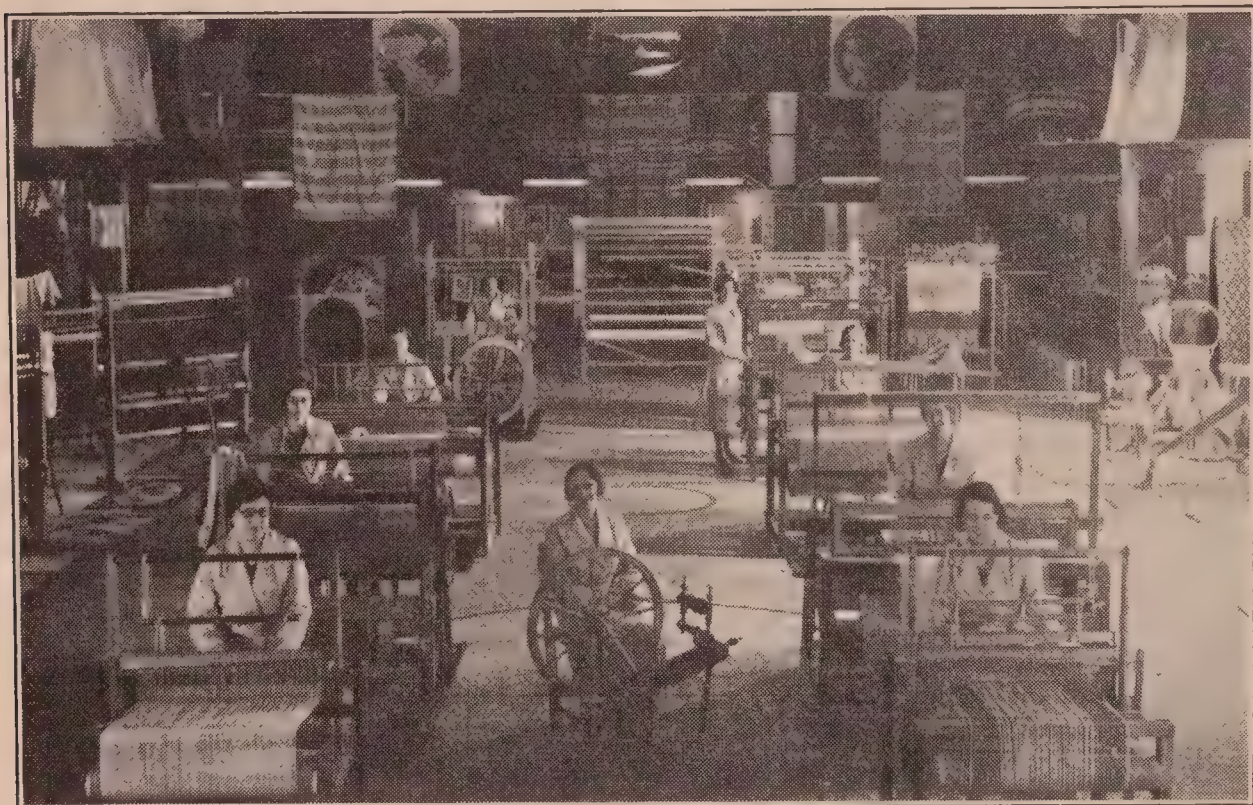
During the period of the guild system the city was the economic unit and every effort was made by the guilds to increase the wealth and power of the city to which they belonged. Municipal regulation of commerce was very extensive, and rivalry between towns was similar to that between nations. There might even be customs barriers, and any trading conducted by outsiders was carefully supervised to protect the interests of the townspeople.

There was a guild of silk throwers at Spitalfields, London, in 1562.

**Handicraft Stage and Action.** With the increase of population came the desire of families to congregate and live quite closely together, thus causing the increase of town life and the growth of larger communities. Then towns began to develop rapidly during the fourteenth and fifteenth centuries.

With the development of community life came the idea of specialization. One might, of course, say that specialization began in a small way when the husband hunted for game and his wife prepared and decorated the skins for clothing. But the principle of division of labor was really introduced only after the beginning of town life and the development of larger communities. It implies

a form of interdependence of the members of a community. When a group of persons can provide all the necessities of life without the assistance of an outside group, we say that they constitute an economic unit. With social organization and division of labor



HANDICRAFT LOOMS IN QUEBEC

Handicraft methods are still used in the Province of Quebec, where the farmers and their families utilize their leisure time in making their clothing from the wool of their sheep. They receive only five cents a pound when they sell their wool, hence the wisdom of utilizing it.

the economic unit becomes larger and larger. Thus the first economic unit was an individual, followed in turn by the family.

**The Domestic System.** The change from the handicraft system of manufacture, as carried on by the guilds, to the system of domestic production was very gradual. The worker ceased to be an independent craftsman and became a wage-earner. The work of manufacturing was still done in the home, without power machinery and with only a few assistants, but the craftsman now produced goods for a merchant or middleman rather than for the customers themselves. The merchant owned the raw material, which was given to the worker for manufacture, and then the finished product was returned to the merchant for sale in the market. Thus we see the beginning of the worker furnishing

the skill and the tools, while the capitalist provides money for the raw material and selling the product. This system of industry prevailed from about the end of the 15th century to the middle of the 18th century, when we find the beginnings of the Industrial Revolution that was to end in the establishment of the factory system of production.

**Cotton Manufacture.** From Venice, Milan, and other Italian cities, cotton manufacture made its way to the Netherlands, from whence it was brought to England by Protestant refugees early in the 17th century. At this time (1600–1650), cotton fabrics, such as fustians, dimities, diaper, thicksets, cords, and velveteens, were woven chiefly about the town of Bolton, near Manchester, in Lancashire, and were purchased there at the weekly market by the Manchester dealers, who afterwards finished them in various ways according to the particular market for which they were intended.

There can be no better illustration of the truth of the old saying that “necessity is the mother of invention” than the early history of cotton manufacture and the difficulties under which the pioneers of the industry labored. The middle years of the 18th century represent the dividing line between the old and new processes.

Cotton was first cultivated in America by some Virginia colonists in 1621 as an experiment. In the year 1728, among the exports from Charleston, S. C., were seven bags of “cotton wool,” valued at \$16 a bag. For what port they were destined no one knows. The importance of cotton was very insignificant up to the time of its introduction into the agriculture of South Carolina. Prior to this, wool, flax, and silk were the chief materials of which clothing was made.

Until the invention of Whitney’s cotton gin, the cotton plant, although marvelously well suited to our soil and climate, was limited in its uses by the great difficulty and expense of separating the seed from the fiber. But for the cotton gin, cotton textures today would command a far higher price than those composed of linen, and in the nature of things would be more highly prized. Upon the perfection and adoption of Whitney’s appliance, however, cotton rose at once to the highest commercial importance. The immense areas of uncultivated land in the South seemed provi-

dentially provided for the accommodation of the great crop. Its introduction energized the Southern people and opened a wide field for exertion. New labor and capital were introduced from abroad or transferred from surrounding States, and under the impulse thus given to the industry, wealth and refinement spread through the land, and that progress which is ordinarily the slow result of years was realized immediately. Since 1792, the year of the invention of the saw-gin, the increase of the cotton-growing interest has steadily progressed. Starting from comparatively nothing, it has reached enormous proportions, the crop of 1931 reaching nearly 50,000,000 bales.

From Greece and Italy the knowledge of linen manufacture traveled westward to France and Flanders, and thence into Germany and England. From these countries it made its way to Russia, Austria, Holland, Belgium, the north of Ireland, and Scotland. In all of these countries linen was the fabric most largely in use until the introduction of cotton. The invention of the spinning frame, the spinning jenny, and the spinning mule in the latter part of the 18th century, benefited almost exclusively the spinning of cotton, and the immediate growth and development of cotton manufacture, largely due to these inventions, gave the linen industry as it then existed a fatal blow. Household spinning and hand-loom weaving immediately began to decline. The trade that had supported whole villages and provinces entirely disappeared, and linen manufacture, in a crippled condition, took refuge in specially favored localities, particularly in Ireland, Belgium, Scotland, and Germany, where it has resisted with varying fortunes the continued assaults of cotton. Scores upon scores of linen fabrics once in high esteem and extensive use are now unknown, or are remembered solely by their cotton substitutes. Among Western nations flax was, without any competitor, the most important of all vegetable fibers till toward the close of the 18th century, when cotton after a brief struggle superseded it as the supreme vegetable fiber of commerce. The power machinery obtained better results in cotton than in linen manufacture.

In 1671 Edmund Blood obtained a patent for carding and spinning waste silk, which was probably the first successful attempt

in Europe to do so. A patent of 1678 was to use a device instead of a helper to draw the cords controlling the warp on a draw loom.

**Early Woolen Manufacture.** For several hundred years prior to the latter part of the 18th century England's principal textile industry was the production of woolen goods. There are two districts in England that specialized in clothing: one imported Spanish wools and supplied raw material to spinners and weavers in Yorkshire, and the other supplied native wools for use by craftsmen who were also farmers, in Lancashire. The fathers and sons worked on the farm and in spare time worked at the looms, while the women, children, and old people were engaged in the carding and spinning. It required from six to eight people to do the carding and spinning necessary to produce sufficient yarn for a single loom. Every one from seven to eighty years of age found employment either carding, spinning, or weaving.

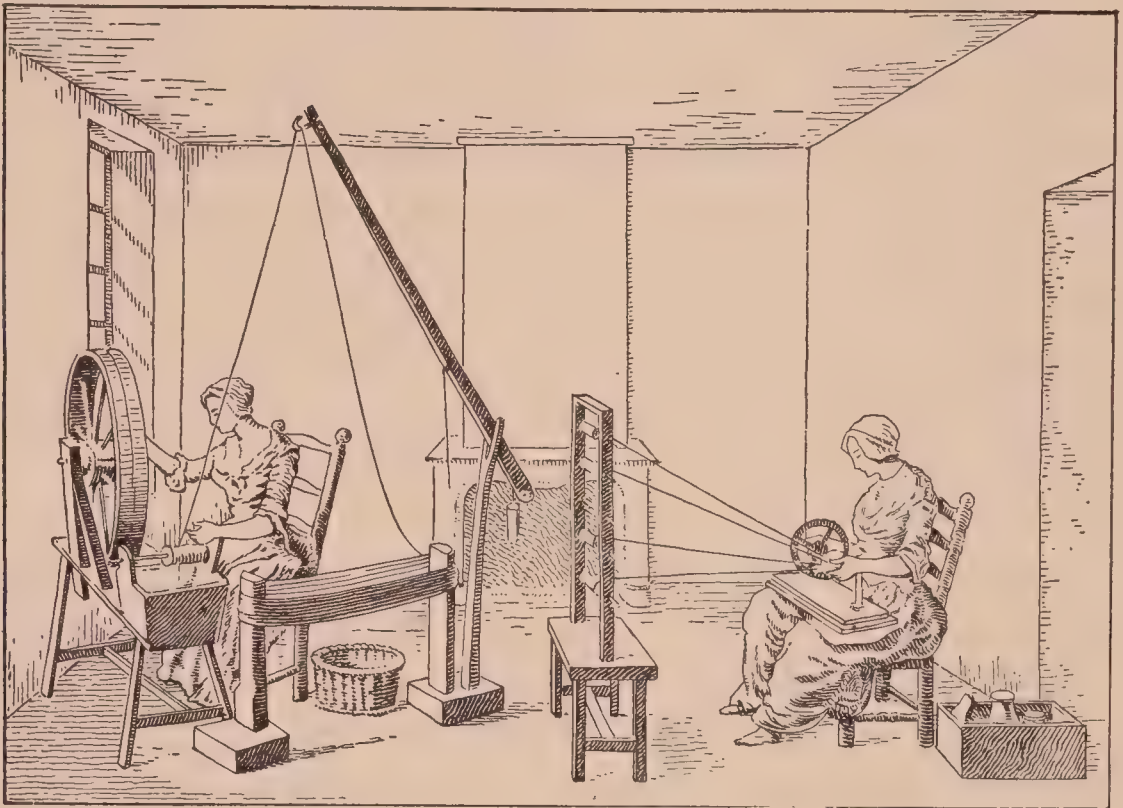
In the latter part of the 17th century the East India Company imported large quantities of printed cotton cloth that became fashionable and threatened by its popularity to reduce the sales of leading English woolens. Parliament passed a law in 1700 prohibiting the importing of printed cottons. In order to meet the demand for cotton goods a cotton industry was established in Manchester, and the cotton was supplied from India through Liverpool, a near-by seaport town. The woolen manufacturers tried to suppress the manufacture of printed cotton by having a law passed, but it was amended in 1736, allowing linen warp and cotton filling fabrics to be printed.

Merchant manufacturers arose in 1740 in response to a demand for a group to sell fabrics. The merchant manufacturers gave out raw materials and received the cloth and paid for carding and spinning. They dyed and sold the cloth. At first the cloth was carried on pack horses.

From the ranks of the craftsmen of the handicraft period — the carpenters, millwrights, weavers — came the men who invented the mechanical devices that solved the problems of meeting the clothing needs of the communities. The small capitalists — merchant manufacturers — of the handicraft period provided the organizing ability and business technique to take the inventions

and organize the factory-mill that has existed since and been a force for the industrial development of the world.

**The Industrial Revolution.** During the last half of the 18th century, England, through her statesmen and industrial leaders, set out to supply the rest of the world with all her finished com-



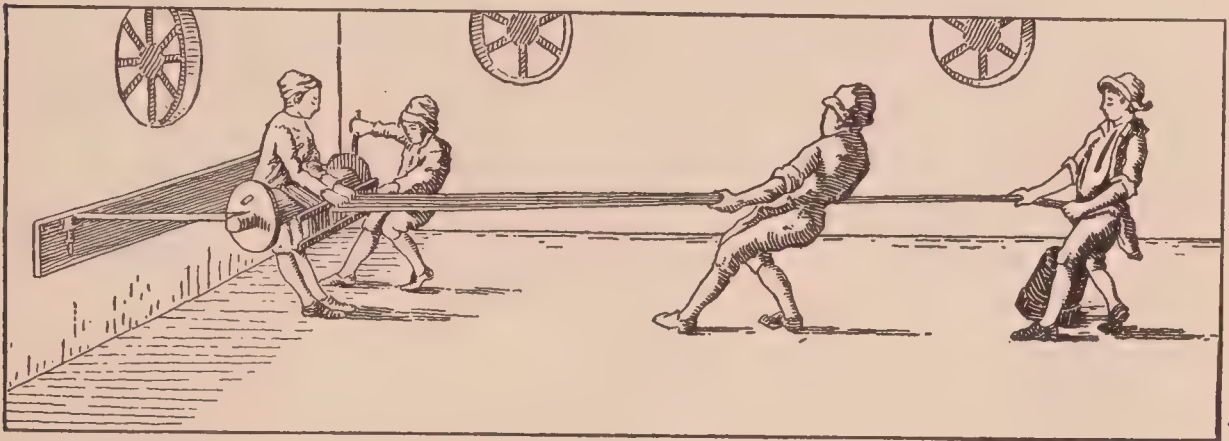
WINDING ON SPOOLS—1750

modities, and especially with textiles. England at that time had an abundance of capital, since London was the financial center of the world. It had also a large supply of free labor, since the feudal system had ended by the beginning of the 16th century and there had developed a large body of artisans steeped in the traditions of craftsmanship, particularly of hand spinning and hand weaving. There was great need for more efficient equipment to turn out sufficient textiles to supply a world market. Up to 1760 the same type of machinery was in use in England that had existed in India for centuries — except the spinning wheel. With the greater demand for cotton goods it became necessary to discover some better way of manipulating the fiber in order to increase production.

The English guilds had mechanical ability equaled by no other nation at that time. We must remember that the great English

woolen guilds were first established in 1300. For centuries they were a power in British affairs. In 1350, a guild member, Thomas Blanket, invented the utilitarian commodity that bears his surname.

The relation of employer and employee dating from the guilds still remained, and left a strong group of more or less organized employers who set to work to develop inventions that would in-



PUTTING WARP ON ROLLER — 1750

crease production per worker and would produce a variety of textile products. This meant a revolution in the industry as carried on in the home, and required a larger unit, composed of employer, many workers to carry on weaving, spinning, or dyeing, and a corresponding group of learners or apprentices.

During the last half of the 18th century the first mechanical devices appeared for the utilization of horse power. These were rapidly succeeded by devices using water power, and later by the steam engine.

In weaving cloth more than 36 inches wide in the old hand-loom, it was necessary to have two weavers for each loom so as to throw the shuttle across the width of the cloth. One person's arm was not sufficiently long to extend across the loom.

In 1733, Kay obtained a patent for a flying shuttle to be used in weaving. This placed a shuttle box at each end of the reed, or bed, along which the shuttle had previously been slid by hand. In each box was a picker or hammer, which was fastened by a cord to the picking stick. When the stick was jerked, the picker or hammer struck the shuttle and sent it flying across its bed, or shuttle race, between the threads of the warp, into the other

shuttle box. Each shuttle was about ten inches long and contained a bobbin, or quill, wound with woof, so that Kay's invention made the action of weaving almost continuous. It was a number of years, however, before it was extensively used in silk weaving.

This mechanical device increased the production of a loom 100 per cent. It also allowed the weaving of any width of fabric.

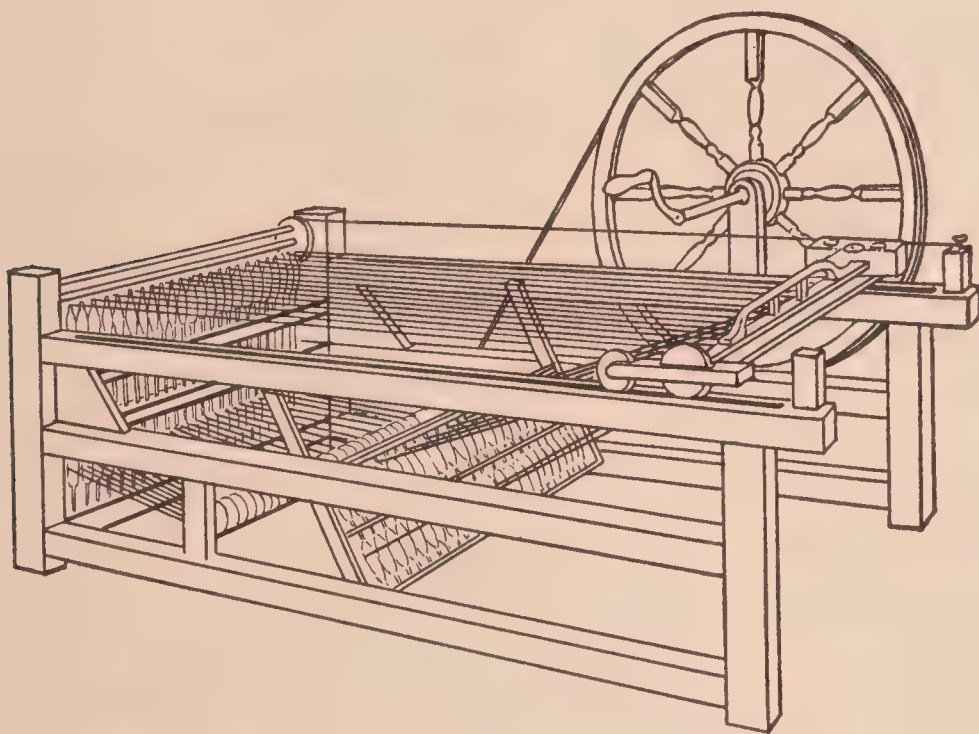


CLOTH-MAKING BY TWO WEAVERS  
French-Canadian farmers

The increased production of cloth called for an increased amount — 100 per cent — of yarn, which could not be produced by the hand cards and spinning wheels. While it had required from six to seven workers to supply yarn for each weaver, the new invention required from twelve to sixteen people to supply it, and it was impossible to secure at once the amount of yarn needed. The price of yarn increased under such pressure and became the one topic of discussion in every workshop. Out of this discussion came a number of inventions, and that of the spinning frame took place in a short time.

The first spinning machine was called spinning jenny, named after the inventor's daughter, Jane. This machine was invented

by James Hargreaves in 1767 and was very simple and suitable for driving by hand. The invention came about through an accident. Hargreaves, a carpenter, happened to stumble against the Saxony spinning wheel belonging to his wife and broke it. In repairing it, the thought occurred to him that by setting the spindle vertically



THE HARGREAVES JENNY — 1767

it might be adapted to work upon the manifold system. His fifth jenny, made in 1786, operated one hundred spindles and was driven by water power. Alarmed by his invention, the indignant hand spinners — who may or may not have had a vision of the economic evils of mass production — attempted to mob him.

In order to understand the development of the spinning machines we must remember that in making or weaving a piece of cloth it is necessary to have two kinds of yarn or thread, one for the warp and the other for the filling. Since the warp is the foundation of the cloth, in weaving this yarn must be a little stronger than the filling. This added strength is secured by providing more twist in the warp than in the filling yarn.

Textile machines attempt to perform by mechanical devices the motions and technique of the fingers and hand. The work done by the fingers of the hand spinner consists of two distinct operations: (1) the stretching and drawing out of a piece or strand of carded cotton, (2) the twisting of these drawn-out fibers into

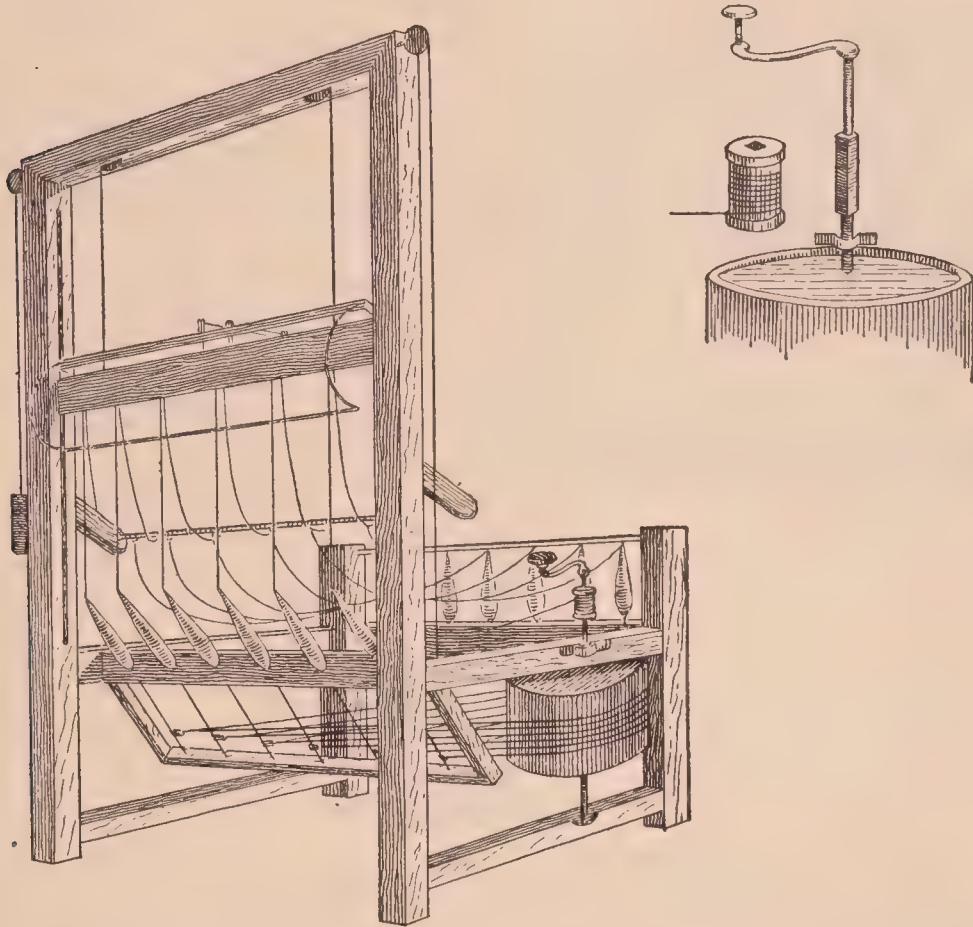
threads. Since it is impossible to perform these movements in one operation, it is necessary first to spin the cotton into a coarse thread called a roving and by a second operation complete the drawing out and twisting into finished yarn.

The yarn made on Hargreaves' machine was suitable only for the filling, as it did not have the required twist for warp. Machines for producing the warp yarn were made by different craftsmen, but the most successful was developed by Richard Arkwright in 1769. It consisted of two sets of rollers moving at different velocities. These rollers took the place of the fingers in hand spinning. The lower rollers were fluted and the uppers covered with leather. The front rollers moving faster exerted a pull on the cotton, but with much more speed and regularity than the fingers in hand spinning. Beneath these rollers were spindles revolving at great speed, on which the twisted thread was wound.

**Machine Spinning.** With the advent of the Hargreaves jenny, machine spinning may be said really to commence. By means of this device one person could spin from ten to sixty threads at one time and by one operation. Though called a hand jenny, it was to all intents and purposes a machine, as its size was limited only by the ability of human strength to work it. At the time of its introduction (1767), six spinners working with one-thread wheels were required to keep one weaver going, so that the jenny came into being in response to an urgent demand. The Hargreaves jenny was constructed on the principle of the spinning wheel; several spindles (from 10 to 60) being made to whirl by one fly-wheel, while a movable frame or carriage, representing as many fingers and thumbs as there were threads, ran back and forth from the spindles, thus extending the loose rovings of fiber in almost exactly the same manner as the hand of the spinster. When the yarn was drawn out a short distance, the carriage, by an ingenious mechanism, was made to recede, and as it approached the spindles the yarn was wound up.

Within two years after the invention of the jenny, Arkwright perfected his roller spinning water frame, and we reach a very important period in the history of modern spinning. The perfecting of the roller spinning frame by Arkwright introduced into the textile industries an entirely new mode of spinning — one that

had not to any degree been in use before. All textile threads before Arkwright's machine appeared had been produced on the same principle, the original principle of drawing out and twisting at the same time — of distaff and spindle, the one-thread wheel, and the Hargreaves jenny. The Arkwright frame, however,

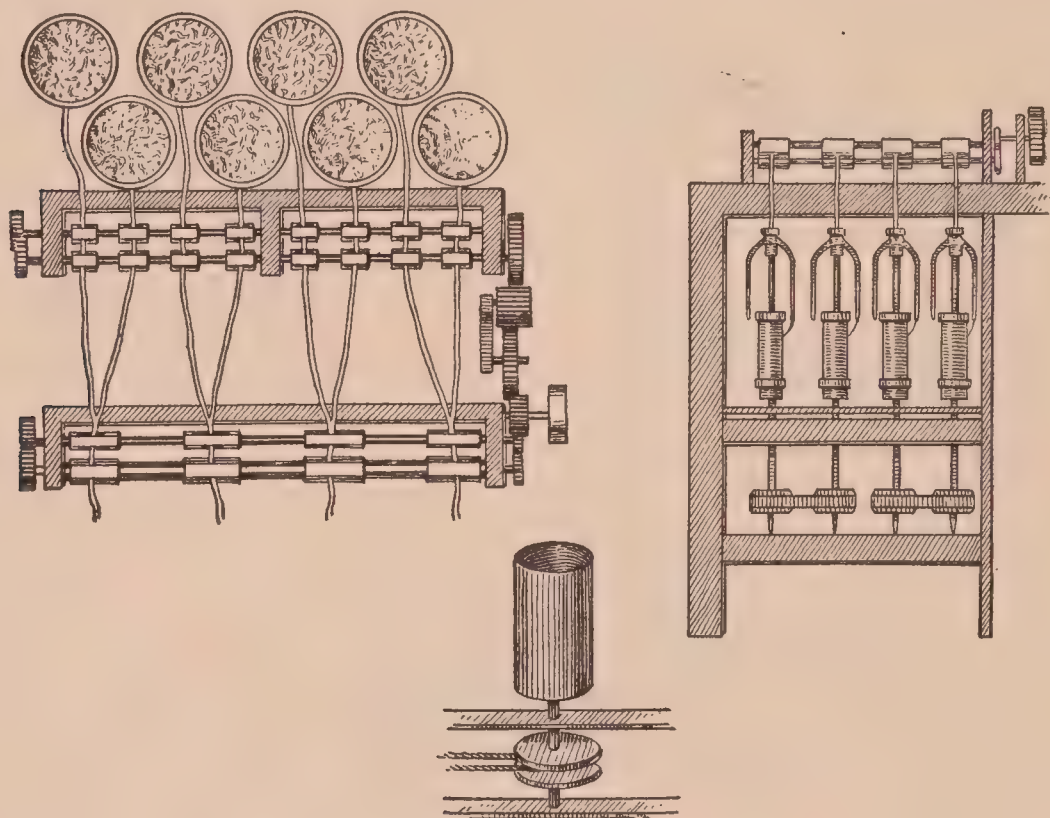


MULTIPLE SPINDLE SPINNING MACHINE

Invented by Thomas Highs

brought into use a new method of spinning, and converted the spinning of the various classes of yarns into two distinct processes. In the Arkwright roller frame, the soft, loose rovings from the carding room were drawn out into thread by means of several pairs of rollers, arranged in sets. The upper roller of the first pair was covered with leather and the lower roller, made of metal, was fluted in order to keep a firm hold on the strands of fiber as they passed through. Another similar pair of rollers was placed directly in front of the pair just described. The second pair, however, was made to revolve at a greater velocity than the first, thus pulling or drawing the yarn from the latter. If the surface of the second pair moves at twice or thrice the velocity of the first pair, the yarn, as

will be readily understood, will be drawn out twice or thrice as fine as it was. In order to reduce the yarn to the desired fineness this operation was repeated two or three times, or until the stand was rendered as fine as possible without danger of pulling it apart. As the half-formed thread emerged from the rollers the last time it



THE ROVING FRAME

was attached to a spindle and twisted to the requisite degree in order to make it sufficiently strong to bear the tension of weaving and the after processes. In this manner the rollers and spindles accomplished what was formerly the work of the finger and thumb of the spinster.

Previous to the introduction of the Arkwright frame, in 1769, all textile threads were drawn on one principle, but since that time two principles of drawing have been employed, and consequently two systems of spinning have resulted. In the new principle of spinning, the spindle has nothing whatever to do with the drawing, that is, the extending of the yarn; this is done entirely by the rollers. In the old principle of spinning the drawing is all done by the spindle. By the roller method is spun all worsted, flax, cotton (except the high numbers), hemp, jute, mohair, alpaca, and spun silk — in fact all the solid, wiry, bare, non-covering class of

yarns; the other class comprises woolen and all soft-spun yarns, which are not roller-drawn, but spun on the old principle of the one-thread wheel and the Hargreaves jenny.

A decade after the roller spinning frame, which was driven by water power, came the invention of the spinning mule, a combination of the jenny and the frame.

The invention of the power spinning machine again disturbed the balance between the output of the loom and the spinning frame. The new cotton yarn mill made yarn faster than the weavers could use it. Therefore the need was for a power loom, which was invented in 1785 by the Rev. Edmund Cartwright. It was bitterly opposed for many years by hand weavers, and it was not until 1800 that it was introduced into the mills. Samuel Cunliffe Lester devised the wool-combing machine, completing the cycle between the raw product and the finished cloth. All this occurred between 1770 and 1785, when the machines were attached to the device that James Watt had dedicated to industrial progress — the steam engine.

The first cotton mills were on banks of rivers to secure water power, but later the steam engine was introduced, which made it possible for mills to be erected near source of raw materials and centers of population.

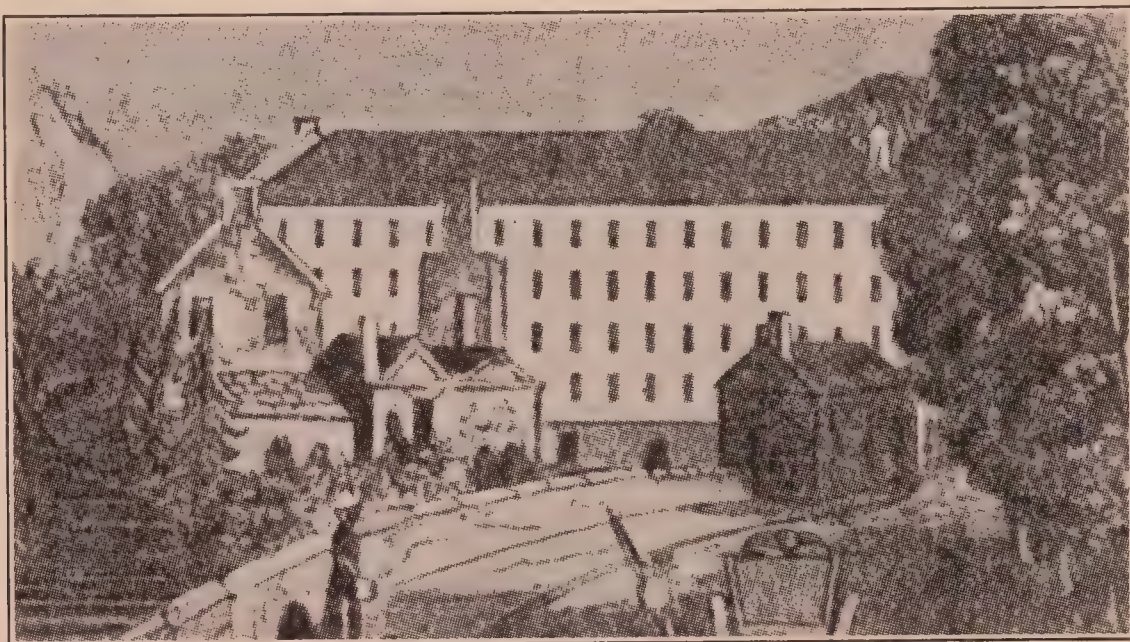
England had developed by the end of the 18th century a system of manufacturing textiles on a large scale, both quickly and cheaply. The industry had moved from the home and small shops into a larger establishment, called a factory. No other country could compete with the English industry because of its monopoly of machine methods.

The first factory system — a cotton mill — was organized and operated in Nottingham in 1769. The first steam-power mill was opened in England in 1785. In 1790 Samuel Slater, working from memory of his experience in an English mill, erected cotton machinery in America. But it was not until some time after the Revolution, in 1807, that power-driven machinery began to appear in this country.

Crawford, a London merchant, patented in 1780 a silk doubling frame, which is notable because it included the first attempt to have a machine stop automatically when a thread was broken.

Another invention of that year was printing from plates, by Bell, who developed this into roller-printing in 1785.

Because England had forbidden the export of textile machinery, and attached heavy penalties to violation of this law, the United States found itself directly after the Revolution in great straits to



ARKWRIGHT'S MILL AT CRAWFORD

secure equipment essential to meet the growing apparel needs of the young nation. From the beginning of colonial history to the early part of the 19th century the hand-card, the spinning wheel, and the wooden loom, operated by hand or foot, were almost as common in the farmhouses of this country as the clock and the sewing machine are at the present time. There are women now living who in their girlhood spun home-grown flax and wove it into linen for their bridal outfits, and who in their early wifehood spun from wool the yarns they knitted into stockings or wove into cloth for their family's ordinary wear. For a long period in our history these rude hand implements supplied to a considerable extent the textile fabrics consumed by a large proportion of the population. The power-loom (invented in 1787) did not find favor as readily in America as it did in Europe, and in England particularly it was firmly established many years before it was generally adopted in this country. Even when the factory system had superseded the domestic industry in the production of textiles, the hand-loom continued to be employed almost exclusively until

about 1850. In the weaving of carpets, hand-loom continued to be used until 1860, and in Philadelphia as late as 1870, at which time the adoption of the power-loom in this industry became universal.

Up to 1870 hand-loom surpassed power-loom. In this period power-loom passed hand-loom in total number. In 1875 there were 1428 of the former as against 1005 of the latter.

**The Factory System.** With the introduction of the steam engine about the middle of the 18th century, we find the end of the domestic system of manufacture and the beginning of our modern factory system of industry. The heavy, expensive machinery could be purchased only by wealthy owners or corporations and operated on a principle of mass production. The small weavers and spinners could no longer compete with the machine production and were gradually driven from their small shops into the factories. The change from the domestic to the factory system occurred very rapidly and caused much suffering and poverty among the textile workers by throwing out of employment many of the hand workers.

The idea of liberty, in industrial activity as well as in personal behavior, that had been introduced by the Declaration of Independence and the French Revolution, hastened this change in the manner of production and the adoption of new methods, thus heightening the suffering caused by the revolution in industrial processes. Formerly the government had actively interfered in the development of industry, regulating the prices of textile products, and exercising a directing influence upon trade. With the introduction of the factory system came also greater freedom of competition and private enterprise. The government regulated only patterns, copyrights of trade marks, and patents to the inventors of new machinery.

The manufacturers began to develop a science of factory organization, including the specialization of work, elimination of waste, and invention of machinery to take the place of many hand operations. All of these devices increased production, lowered the price of cloth and clothing, and destroyed the competition with hand-woven and hand-made clothing. As the result of greatly increased production, the market was at times flooded with clothing, which frequently meant loss of work on the part of the employees, and at

times reduction in wages. The hours of labor were long, and children were long employed in textile mills. In fact, in many cases only the combined earning power of the father, mother, and children was sufficient for a living wage.

Prior to the Industrial Revolution, in the pre-machine age, there was marked stability in society. A settled population, fairly evenly distributed and slowly increasing in numbers, with industrial labor in close contact with the soil insured a self-sustaining and well-balanced relation between the necessities of labor and earning power, so that prices, wages, rents, and employment were fairly constant, except at times of occasional flood or crop failure.

Each invention of machine or process during this period disturbed and in some cases upset the economic balance between the number of workers and the work to be done, which caused unemployment, poverty, and much unrest among the people of the community.

While the industrial revolution and the factory system did not create the capitalist and the poor workingman, they did create a condition that allowed greater development of these two classes, and produced overcrowded industrial centers. The poor workingman depended upon his job for an existence, and children at the age of six or seven toiled up to fifteen hours a day in unsanitary mills.

**Machine Age.** The first part of the factory system was called the Machine Age, and is represented by the 19th century. During this time work hours were steadily reduced as new machinery took over the tasks performed by men, and the men thrown out of employment were absorbed into new positions created by shortening of hours and increased production.

The greatest development of labor-saving machinery has taken place in the United States, where all types of machinery, tools, automatic devices, conveyors, and various kinds of controls have been gradually introduced.

**Power Age.** But with the opening of the 20th century the Power Age came into existence and electric power tools were substituted for machine tools operated by man. Electric power makes possible intricate sensitive tools. While a gang of men in the machine age operated a group of machines, in the power age one mechanic supervises several gangs of machines. This has

been multiplied until today with power machinery one man can accomplish as much as 45,000 men and women with their hand-looms and spinning wheels of two centuries ago.

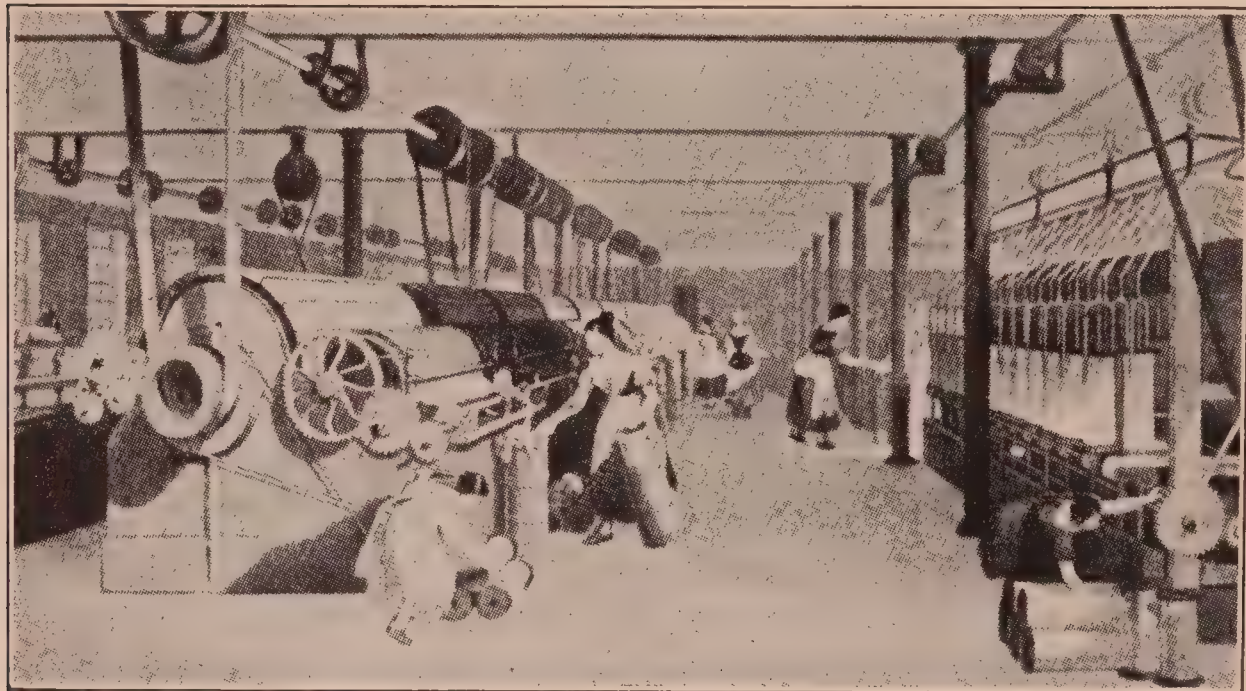
During the Power Age unemployment has increased faster than during the Machine Age. This has occurred because hours of labor have not decreased proportionately and also because consumption has not increased proportionately.

Many abuses and evils that were not in the interest of society thus followed in the wake of the factory system. Selfishness, greed, and grasping for profits caused many of these abuses, and somewhat detracted from the positive advantages that were to be obtained from the increase in production and the labor-saving devices that mass production had made possible. Such abuses, however, are pretty widespread in human nature, and were not peculiar to the factory system although they flourished there during the early competition. Various laws have been passed in later years to eliminate these abuses. The Sherman Anti-Trust law has been passed to curb combinations and monopolies in industry; child labor laws have been enacted; the Federal Trade Commission and the Interstate Commerce Commission have been given certain powers of regulation; and workmen's compensation laws have been passed. In these and other ways the United States government has sought to counteract the worst features of mass production and to protect the workers and the consumers.

Periods of depression have taken place about every ten years during the last half century under the factory system. Most of these depressions have been due to maladjustment of production and consumption.

**The Factory System in the United States.** The first cotton mill in the United States to be operated upon the factory system was erected in 1787 at Beverly, Mass., by a stock company, at an outlay of about \$20,000. So great an interest was felt in this enterprise that the State legislature assisted it with an appropriation of \$6000. In 1789-91, machinery for carding and spinning cotton (after Arkwright's and other English inventor's methods) was set up in Rhode Island and elsewhere. Previous to this time America had no cotton factories, goods of this description being either imported from the mother country or produced by hand processes

in the homes of the people. With respect to the establishment of the cotton manufacture in the United States, special credit is due to Samuel Slater, a native of England, who emigrated to this country in 1789. In the following year he made with his own hands a series of Arkwright machines, and started at Pawtucket, R. I., a cotton-spinning factory. In 1794 he made the first cotton



VIEW IN SLATER'S MILL

sewing thread. In 1806, the firm of which he was a member founded the village of Slatersville, R. I., where they put into successful operation most of the new improvements then used in England. By 1810 many of Slater's models were in use by others, and factories had been established in Connecticut, Pennsylvania, New York, Massachusetts, and other States. The weaving of cotton cloth was done by means of hand-loom until the latter part of the year of 1813, when there was started at Waltham, Mass., the first mill in the United States in which power-loom were used.

**European Textile Factories.** Every branch of textile working in Europe is the outgrowth of a household art. When new conditions appeared, due to the changing from hand-processes to automatic machines, each mill or small factory that sprang up specialized in one or another of the textile operations, such as wool washing, weaving, carding, or spinning. The manager of a weaving mill frequently knew little if anything of a spinning mill and *vice*

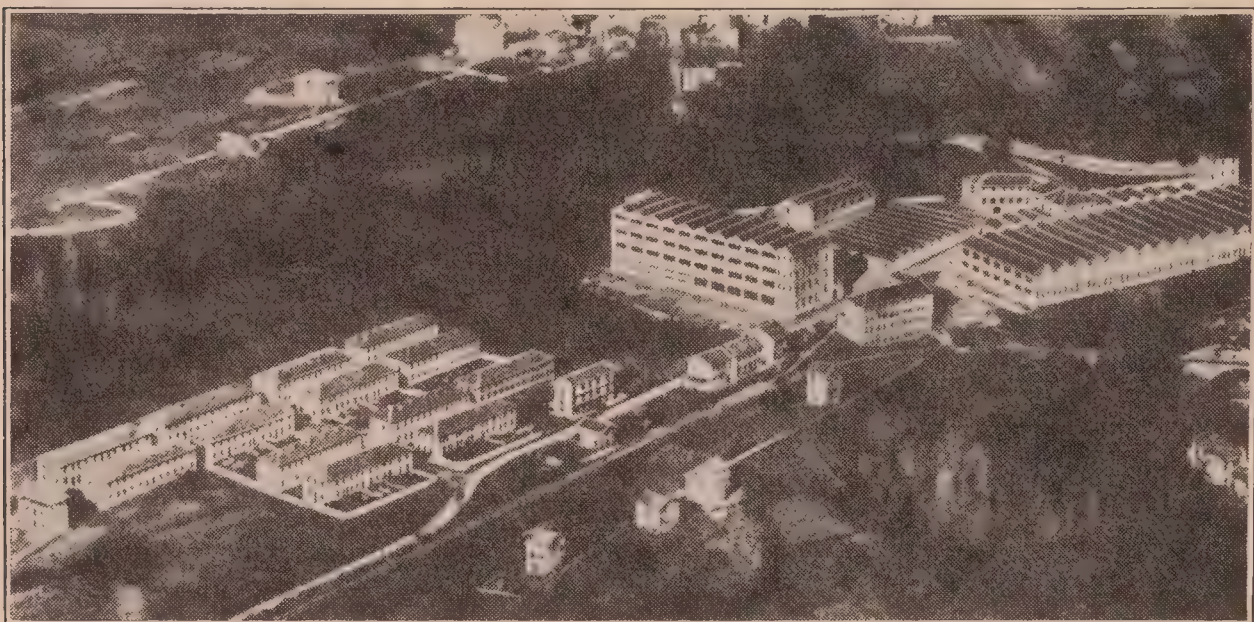
*versa*. One of the results of this mill organization is that the manager of each establishment develops into a more competent man in his specific vocation than one who is hindered, like the mill managers of the United States, with the superintendence of all the processes involved in the converting of raw cotton or wool into finished cloth. On the other hand, the concentration in textile work in America has tended to economy and improvement in textile machinery, particularly in the matter of speed. The fastest-running machines in the world, for the formation of so delicate a fiber as silk, are in operation in the silk mills of Paterson, N. J. So nice is their adjustment and so well perfected their mechanism that they run even more smoothly than the slower-gearred machinery of Germany.

Parallel with this improvement in machinery has been the progress made in the quality of goods produced. While the early American weavers turned out simple pieces — that is, plain silks — the American silk manufacturer today finds nothing too difficult for his skill or too expensive for the market. Slowly but surely the textile products of domestic manufacturers have crowded out foreign products, except for some novelty or new design in silk fabrics that the home silk-weavers of Germany have developed with the aid of the government.

Germany is not famous for its cotton industry, which is still in a comparatively early stage of development; but its advance is shown in the history of Munchen Gladbach, where the chief cotton factories are situated. In 1860 the population of the city was about 7000, today it is about 640,000, and the increase is due chiefly to the cotton industry. This compares with the progress of some of our southern cities. There is no doubt that Germany means to go forward with this branch of textiles.

No foreign market can compete with the United States in the manufacture of shoes. In Germany the shoe manufacturers send out agents to find out what is wanted in the trade, and then attempt to manufacture ladies' shoes, slippers, men's and boys' shoes in the same factory. Here, the manufacturer turns out a certain product, which is his specialty, and sells it wherever possible. If he manufactures several products, he has separate factories for them.

At the commencement of the 19th century, the chief silk-producing regions of the world were the Levant (including Persia, Syria, and Broussa), India, Italy, and France, the two first named producing low-priced silk, and the other two the fine qualities. Between 1840 and 1850, after the opening of trade with China, large quantities of silk were sent from Shanghai and Canton. In 1857



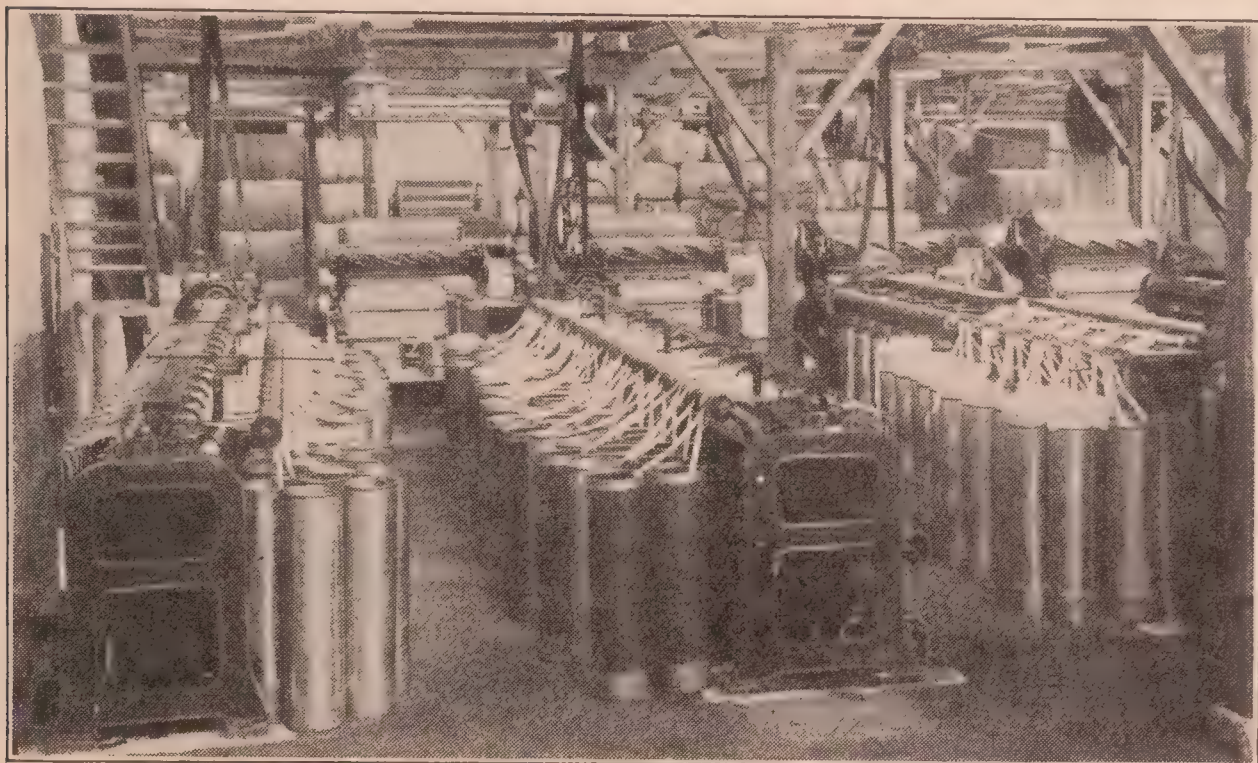
WOOL COMBING AND SPINNING MILLS, TOLLEGNO, ITALY

Foreign countries have up-to-date equipment and can compete very closely with the United States

commenced the importation of Japan silk, which became a fierce competitor with Bengal silk and gradually replaced it in favor. China and Japan, both of which contribute so largely to European and American silk supply, export only their surplus growth, since silk weaving is carried on and native silk worn to an enormous extent in both countries. The opening of these lands to Western commerce has had not only the effect of cheapening silk and silk manufactures in general, but also has broadened the field from which the industry can draw its raw material.

In the manufacture of silken fabrics, France occupies an important position among the nations. Not only is all the raw silk produced in France worked up within the country, but a very considerable portion imported from the Levant and China passes into the hands of the French manufacturers. Lyons is the headquarters of the trade. In that locality, if the surrounding country be included, employment is given to about 120,000 looms, 25,000

of which are driven by power. There are also important manufacturers of silk at St. Étienne, Calais, Paris, Nîmes, Tours, Avignon, and Roubaix. In Germany the principal seat of the silk trade is at Crefeld, which controls a large trade in cottonback satins, pure silk broad goods, and ribbons of all kinds. Barmen,



VIEW IN COTTON MILL IN ECUADOR

Elberfeld, Viersen, and Mulheim in Rhenish Prussia are also flourishing silk centers. Third on the list of European producers is Switzerland, where Zürich takes the lead with broad goods, and Basel rivals St. Étienne in the ribbon trade. Italy, the early home of the silk trade — the land of gorgeous velvets, damasks, and brocades — has fallen from its high estate, and now employs not more than 20,000 hand-loomers. In England silk manufacture has been in a condition of decline since 1860, the date of the commercial treaty with France, by which silks were admitted into the country free from duty. The principal seats of the industry in England at present are Spitalfields, Coventry, Nottingham, and Manchester.

**Attempts at Silk Raising in America.** Various attempts have been made to encourage the raising of silkworms in this country. It was encouraged in 1657, when the Virginia Assembly offered 10,000 pounds of tobacco to any planter who should export 200 pounds worth of raw silk or cocoons in a single year; 5000

pounds of tobacco to any one producing 100 pounds of raw silk ; or 4000 pounds of tobacco to any one producing silk exclusively. The bounty was withdrawn in 1666 and renewed in 1669, but it was never claimed.

Land was given to settlers who would plant 100 mulberry trees for each 10 acres. In 1735 eight pounds of raw silk were sent to England and there thrown, woven, and presented to the Queen. Parliament in 1749 exempted from duty silk produced in Georgia or Carolina. The Connecticut Assembly in 1763 offered 10 shillings bounty for 100 mulberry trees planted and kept in good condition for three years ; and another of three pence for each ounce of raw silk produced. In 1790 a woman and three children could in five weeks make 10 pounds of raw silk worth \$50.

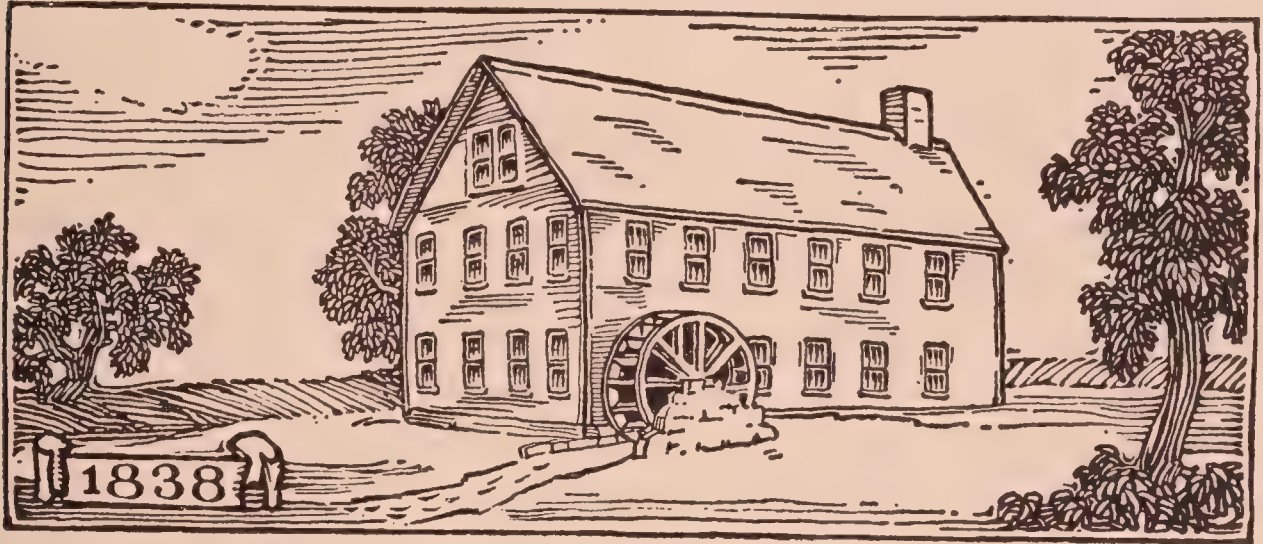
All attempts to raise silkworms in America have failed. The fundamental reason for this is, not that mulberry trees and silkworms can not, though with difficulty, be raised in this country, but that the production of raw silk is essentially a household and hand process still requiring, as in the days of ancient China, infinite patience and an altogether disproportionate amount of human labor. Even in Italy, during the silkworm season, the whole house, including the bedrooms and beds, is given over to the worms, upon which the women lavish every attention from daylight until late at night, and for all this trouble and work they net only about twenty-five cents a day. In Japan and China such household labor may bring as low as eight to ten cents a day.

Silk can not be grown by the highly paid labor of the United States in competition with such meagerly rewarded oriental drudgery, nor can household hand labor compete here with other industries in which most of the energy is furnished by power and most of the work done by machinery.

Ralph, Ward, and Frank Cheney, together with E. H. Arnold, on January 2, 1838, formed the Mt. Nebo Silk Mills at South Manchester, Connecticut, the first really successful silk manufactory in the United States and the only one that has existed continuously from that date.

The story of the Cheney silk mills is typical of the growth of the industry, and, even more than that, of the development of the United States from an agricultural to a manufacturing country. A

number of details which have been preserved in old diaries show how crude was their beginning, as in fact was the start of most factories at that period. With an original capital of \$50,000 this little group of pioneers planned to convert a barn into their first silk mill, and machinery was ordered built for delivery in April, 1838. The barn idea, however, not proving feasible, it was decided to build a factory which was to be only  $32 \times 45$  feet. It



ORIGINAL CHENEY HILL

is interesting to note that the hand hewing of the timbers cost four cents a foot and that the joiner's work for the whole original mill was \$262. When this work was done, the whole neighborhood turned out for an old-fashioned "barn raising" bee which took place on March 31, 1838.

The power for the silk factory was taken from the bottom of the tailrace of a mill which served at different times for paper making, grist grinding, and distilling. A little undershot wheel was used, and there was all together only a six-foot fall.

The invention of the sewing machine greatly increased the call for sewing silk, and created a demand for stronger and more even thread than had been used in hand sewing. Whereas in hand sewing the thread had been twice doubled and twisted, it was found valuable for machine sewing to combine three threads. The manufacture of machine twist was begun by the Cheney's as early as 1852, and soon developed into an important department.

In 1857 the buildings were still of wood. The power still came chiefly from the brook and was furnished by two turbine wheels

of 20-horse power, each 26 inches in diameter. Steam was supplied for the dyehouse from two locomotive boilers.

An invention of the 'fifties, made in the factory, greatly simplified spooling, which had previously required one girl to attend to each machine. Frank Cheney and Grant, after only three months' experimenting, evolved a spooling machine which enabled one girl to attend to three machines. This marked the third important improvement made by the Cheneys in silk manufacturing in a little over a decade.

The tariff that was put on silk goods during the war in 1861 made it possible to develop the weaving of silk far more extensively in this country.

One important feature of the factory was the use, in doubling and twisting, of the new Rixford roller made for the Cheneys. This was turned only by friction, and hence would give a little in drawing out the silk, and thus avoid breaking it, as the former fixed rollers had been constantly doing. As this principle is well-nigh essential in working silk, the Cheney factory, even at its very inception, introduced an almost revolutionary improvement.

The first energies of the company were devoted chiefly to sewing silk, which was made almost entirely from raw silk imported from the Orient. The American merchant marine was then at the height of its glory and the famous clipper ships were making their marvelous runs from the Far East in 90 to 100 days. Now, express liners of our reborn merchant marine land their cargoes of raw silk on the west coast in 11 to 14 days, and they are rushed by fast freight direct to Cheney Brothers' mills, the total time from Yokohama taking as little as 20 days.

Records of 1843 show that the average pay in the silk mill, employing both men and women, was only 51 cents a day. In the simple life of the day it was possible for a man to live, raise a family, and be a highly respected member of the community on this amount of money. In 1848 the wages of the men averaged \$1.14 a day; of the women, 63 cents a day. The total average was 72 cents.

**Linen Manufacture in the United States.** The modern history of linen manufacture has been curiously fitful. In the transition

from a hand to a machine industry, linen lagged far behind cotton, wool, and silk. As the consumption of cotton goods marvelously increased and multiplied with the application of power to their manufacture, they literally drove linen out of the field, in the earlier part of the 19th century. By slow and costly steps, spinning and weaving machinery was gradually applied to flax, and the industry was fairly back in the race for competition again when our Civil War broke out and the world's cotton famine followed. Then came a mighty impulse to the linen industry. Dundee and Belfast developed as centers of manufacture, and the consumption of all classes of linen goods increased throughout Europe and America by leaps and bounds. But when the war ended and the cotton supply again increased, the collapse was as sudden as the revival had been, and the production of linen fabrics has never since reached the volume it attained from 1861 to 1866. As a matter of fact, it has been declining from year to year, as is demonstrated by statistics of export and of machinery employed.

Although more linens are consumed in the United States in proportion to population than in any other country, yet the manufacture has never taken root here as compared with other textile industries, due to the excessive cost of hand labor required in the manufacture of linen. Since 1931 linen manufacture in the United States has improved, due to the invention of machinery in the Northwest for its manufacture.

**Survival of Handmade Textiles.** With the invention of power textile and clothing machinery the demand for handwork became less and less. But at no time have the hand operations been completely eliminated by machinery. To illustrate: It has been found impossible to provide machinery to make hair nets. Because of the fine texture of hair and the shortness of the strands, machinery will not knit the delicate nets. Hence all fashioning is done by the hands of Chinese natives.

The making of customized clothes is still essentially a handicraft — but a handicraft developed along modern lines of efficiency and production. It is dependent on the skill of the individual workers — the great organization of expert tailors which has taken years to assemble. The human body is composed of curved surfaces, and the cloth is flat. To shape the fabric into curved places the

flat cloth must be pressed, stretched, and shrunk into proper shape by hand manipulation. This shaping is called "padding," and is very important in the formation of coat fronts, lapels, and collars.

Attempts have been made to do this padding by machinery, but if the padding is done by machine, no curve is built into it. If the padding is done by hand, it is possible for expert fingers to manipulate the two pieces of cloth so as to give almost any curve desired. As you place the stitches, you hold the under cloth so that it is stretched out tight and you hold the upper cloth so as to gather it together and crowd it just a bit against the needle. As a tailor would say, you work in a little fullness with each stitch. When it is done, you find the double thick fabric is no longer flat: it curves. The cloth that was on the under side as you stitched is on the inside of the curves.

Now the human body is nowhere flat. If coat front, lapels, and collar are padded by machine, they are still flat, and the curves must be pressed in or stretched and shrunk in. If the curves are developed by expert hand padding, they are truly tailored in. This hand padding costs eight times as much as the tight, flat stitching of a sewing machine. It is worth it. Besides this there is hand padding — and hand padding! Hand stitches taken without skillful working in of the curve might be no better than if done on a sewing machine.

Felling the tape down the front edge of the coat by hand costs fully five times as much as to fell it on a sewing machine. The hand work gives a soft, smooth, flexible edge, and one that is thinner and more pleasing in every way than machine work. The hand felling is also a great safeguard against puckering.

But to secure the easy comfort, fine lines, and lasting style of customized clothes, the band saw, the pressing form, and many other mechanical contrivances, and to a very large extent even the sewing machine, must give way to the slower, more costly, but much finer methods of the expert hand worker.

Often finer effects can be obtained by hand than by machine sewing. Thus hand embroidery is softer, not so rigid, and more attractive than machine embroidery. During the 14th century the art of pictorial needlework or embroidery had developed as a fine art that surpassed paintings in many respects. The needle

in the hands of the skilled artisan moved over the surface of the woven fabric like the brush of the painter, producing beautiful colored designs. Women during the early centuries were shut out of business, and used their leisure to cultivate the art of embroidery. At first embroidery was restricted to the wealthy. Its general use and popularity among the masses was reserved for a recent period when embroidery machines were invented. No machine has produced the equal of an excellent oriental rug or carpet, because of the centuries of experience and training in creating the beauty and novelty of the pattern and the rich and harmonious colorings. No machine has been invented that can give the twist to the yarn and tie the square knots that are the peculiar features of the handmade fabric. In addition handmade rugs are the most durable in the world because they are built up knot by knot slowly, skillfully, and laboriously. Sheep are especially bred to produce rug wool of the finest texture. An added interest in handmade rugs is that they bear the imprint of human labor — days, weeks, months, and even years of laborious toil. The story of human life may break into design — in its form, pattern, and colors.

Some of the most exquisite manufactures of the world are carried on by the hands of peasants in remote valleys and mountain solitudes. The celebrated and unrivaled cashmere shawls, noted for their great elaboration and glowing harmony of design, are wrought by the patient natives of India, on rudely constructed looms. The finest and most sumptuous Smyrna rugs and Persian carpets are slowly put together on a loom built between two trees. The most enduring blanket to be had in any country is woven in the remoter parts of Arizona by Navajo squaws.

It has been found that power looms, urged by steam or turbine, are too rough for the finer qualities of linen and cambric embroidery, and for this work the fingers of Irish peasant girls are the best of all machines. The mummy wrappings show that with their crude machinery the ancient Egyptians produced linen fabric far exceeding in fineness any cloth that we can produce with the most modern mechanical inventions.

There was a time in the history of our own country when the hardy pioneer clothed his family with better woolens and better

linens at less cost than the power-loom products can be bought for now at home or abroad. The French Canadian farmers are producing some very fine hand-loom fabrics today at less than factory prices.

For downright durability the cassimeres and jeans, the table linen, coverlets, and "butternut" of this home-weaving period have never been equaled. However, as the new country gradually increased in population, farming, along with other classes of business, began to assume a more specific and limited form. With the building of towns, the settler found the sawing of his trees into lumber and the clearing away of his forests for the greater production of stock and grain a profitable employment. His time has become limited in which to prepare the yarns for his weavers. It was tedious and toilsome work to prepare the linen, with always more or less delay and uncertainty connected with harvesting, retting, heckling, and spinning of the flax. Much time was also consumed in the shearing, washing, carding, and spinning which were necessary in preparing the woolen yarn. The entering wedge to the breaking up and final abandonment of home weaving was the establishing of carding mills in country neighborhoods. These mills would take the farmer's wool and, with improved machinery, card it for him while he waited. Today the handmade textiles are luxuries, prized for their beauty and durability far above the less expensive machine product.

### QUESTIONS

1. Through what stages has industry developed?
2. Why are women credited with inventing the original textile processes?
3. Briefly describe the steps through which thread spinning has probably evolved.
4. How did the primitive weaver weave his cloth?
5. In what way does the Navajo Indian weave his beautiful blanket?
6. What are the principal colors found in Navajo blankets, and what do they represent?
7. Where did the Hebrews learn the art of producing fine linen?
8. What was the Roman attitude toward linen?
9. Where did sericulture originate?

10. Briefly describe life on a feudal manor.
11. How were shoes made by hand?
12. Explain the operation of the one-thread spinning wheel.
13. Compare the flax wheel and the wool wheel.
14. What is meant by bartering?
15. What are guilds?
16. Trace the origin of guilds in the textile field.
17. Compare craft guilds and trade unions.
18. How does the domestic system differ from the guild system?
19. What would be the position of the cotton industry today if some easy way of separating seed and fiber had never been invented?
20. What fiber was largely displaced by improvements in cotton manufacture?
21. Explain the operation of Arkwright's frame.
22. Describe the characteristics of a roller-drawn thread.
23. How does a "woolen" thread differ from a roller-drawn thread?
24. What sources have furnished motive power for textile appliances?
25. What effect did the development of the factory system have upon governmental control of industry?
26. In vertical columns list the advantages and disadvantages of the factory system as compared with the domestic system of production.
27. By what agencies does the government attempt to control the abuses of the factory system?
28. For what is Samuel Slater noted?
29. Compare the German and American method of shoe manufacture.
30. At one time linen was more popular than cotton. What factors are responsible for the increased use of cotton?
31. What textile products are still made by hand?
32. In the case of these products what advantages has hand production over the machine?

## CHAPTER VI

### BUSINESS ORGANIZATION

#### TEXTILE AND OTHER INDUSTRIES

**Importance.** A knowledge of the history and development of the textile industry makes possible a better understanding of production and marketing. The clothing and textile industries have developed rapidly from their beginnings in private homes as part-time occupations to their present importance as large-scale enterprises constituting one of the most important branches of American industry.

Few people realize the magnitude and importance of the industries for manufacturing wearing apparel. Since cloth is the principal item in clothing, it may be well to consider this one item by itself — number of people employed, etc. The textile industry alone gives employment to over 1,000,000 persons, paying them more than \$500,000,000 annually in wages and salaries; producing nearly \$1,750,000,000 in gross value of product, and giving a livelihood to at least 3,000,000 of our population.

According to the recent census of the United States it is estimated that the manufactured value of America's clothes runs close to \$5,000,000,000. But that is by no means what the ordinary purchaser has to pay out himself. From the factory to the jobber, to the retail seller, plus transportation and profits — the cost of these clothes mounts so rapidly in reaching the consumer that the inhabitants of the United States, 130,000,000 in number, expend at least \$15,000,000,000 a year for clothing. At this rate, the average man, woman, and child will spend \$120 a year on wearing apparel.

The "spread" between the manufactured value and the retail price of clothes can be illustrated by the following: According to census compilations the average manufactured value of women's stockings is 39 cents and men's socks 22 cents. Divide the average

into the retail price you pay and you will know the difference in percentage between value and cost.

With regard to hosiery, in one year 1,168,195,024 pairs of stockings and socks were manufactured at a value of \$379,000,000. In other words, everybody in the country wore out, on the average, 10 pairs of stockings or socks in 12 months. Of these 453,810,456 were men's and 714,384,568 were women's. Note that because hosiery is a more important item in the dress of women than of men that women wear out theirs twice as fast as men. More than half of the women's stockings made pretensions at being silk — 251,000,000 pairs with some silk in them. However, in a year only 36,000,000 pairs of real silk stockings are manufactured for women. Only five per cent of women wear real silk stockings, but only four per cent of the men sport real silk at their ankles. Out of 118,000,000 so-called silk socks, only 18,000,000 are the genuine article.

During the year 351,144,000 pairs of shoes were manufactured at a total manufacturer's value of \$950,479,000. Thus the average value per pair of shoes in the United States was \$2.72. The difference between this sum and what you pay at retail represents the cost of marketing, etc. If these shoes were evenly divided throughout the country, your quota would be three pairs annually. If you bought more than that somebody else must have done with fewer pairs. There were manufactured 100,282,892 men's leather shoes, and 109,676,409 women's leather shoes. The girls had 8,345,705 fancy dress slippers of satin or silk. The sport people used 6,433,693 in golf and tennis.

Men's clothes have a manufactured value of \$1,179,000,000, and women's \$1,407,000,000 during a year. The largest item for the men, of course, is suits, on which they spent \$560,000,000. Their overcoats have a value at the factory of \$192,000,000. Workmen in denim require clothes manufactured at a cost of \$94,000,000. Boys' clothing costs barely less than \$90,000,000.

Women's clothing runs higher. Their largest expenditure, according to the census figures, is for dresses, shirt waists, and blouses — \$634,000,000. Their suits, skirts, and coats represent a value at the factory of \$518,000,000. As for their underclothes, the silk or semi-silk kind, together with such things as corsets and petticoats, amount to \$115,000,000. Heavy knit underwear,

however, is still very popular, some \$469,000,000 of it being made for men and women during a year.

Then, of course, there are cosmetics — \$150,000,000. In addition, over \$150,000,000 is spent for dress accessories, not considering the very large amount spent for jewelry.

**The Business Man — Entrepreneur.** We found in Chapter I that the various factors contributing to production may be classified as (a) land, (b) capital, (c) labor, and (d) management. Thus, when we consider successful textile manufacturers we see that their production of cloth is due to these four factors: (a) land — a place to do the work, such as a business establishment housed in a building located on the land; (b) labor, possessing the necessary skill to work the raw materials into finished products; (c) capital, or machines and money to pay wages, purchase supplies, and finance the business until the finished textiles are sold and the payment received; and (d) intelligent management, supervisors and executives to organize and control the business of production. Raw materials, machines, land, buildings, and labor will not produce commodities unaided. They must be coördinated, organized, and supervised. Some one must take the initiative in planning, making decisions, and accepting the risks and responsibilities of the enterprise. The one who undertakes this task is called the entrepreneur or business man.

Thus a shoe manufacturer must decide on the kind, quality, and number of shoes he is to produce. He must advertise to create a demand or else have a ready market for his product. He has had to organize his shoe factory, securing site, capital, building, equipment, raw materials, employees, etc.

Whether the entrepreneur or management element in a business consists of one person or many persons depends largely upon the type of organization followed and frequently upon the size of the enterprise. Business organizations are usually classified into four groups: (1) individual business man, (2) partnerships, (3) corporations, and (4) coöperative organizations.

**Types of Organization.** If we study the different companies or business men engaged in the production of wearing apparel, we shall find, as in other lines, all forms of business organization, each with distinct advantages and disadvantages.

(1) The single business man, such as a proprietor of a haberdashery or a dress shop, a farmer who raises cotton, a proprietor of a millinery store, etc.; (2) partnerships — a combination of two or more proprietors, such as exists in a garment factory where one partner may be the head designer, looking after the manufacturing, while the other is looking after the marketing of the garments; (3) a corporation, composed of three or more individuals with a charter from the State, such as a large mill or a company like the American Woolen Co.; (4) a coöperative business organization, such as the Wool Growers' Coöperative Association, where the wool growers coöperate in selling the wool through their own organization in order to secure the additional income that would go to the middleman business firms.

**Single Business Man.** The first type of organization, in which the entrepreneur is a single business man, may be illustrated by a farm, sheep ranch, cotton plantation, or the merchant tailor. Most of the raw material used in the manufacture of textiles is obtained from the farm: (a) cotton, (b) wool from the back of sheep that graze on farm land, (c) linen, (d) silk from the silkworm that feeds on the fresh mulberry leaves. Even spruce wood and cotton-seed furnish fibers that are the raw materials for synthetic fabrics, as rayon. All these come from the farmland. So some of the problems of the farm, usually called agricultural problems, are more or less the problems of textiles and clothing as well.

The farmer today who devotes his life to the raising of the raw materials for clothing has not been able to prosper because of the low prices of his products and the high prices of the commodities he is obliged to buy for his farm. The farm products, particularly cotton and wheat, which are exported, must compete with the world's market in cotton and wheat. The tariff, on the other hand, protects the manufacturer of domestic commodities. The home market, which is high, determines the price the farmer pays for his commodities, while the world market, which is low, determines the price at which he must sell his wheat or cotton. Farmers naturally feel that since the industries of the country have been assisted by the government by tariffs, etc., the government in turn should assist them.

The farmer was very prosperous during the World War because of the demand for foodstuffs. During this time he procured more land and better machinery at the high (inflated) war prices. After the war, prices dropped one-half, and the demand for cotton and foodstuffs decreased. Hence he was frequently unable to continue the payments on the mortgage on the land and the payments on the new equipment.

The farmer is handicapped in many ways, more so than the manufacturer of the industrial group. He is unable to determine in advance the exact size of crops of cotton, etc., because of conditions over which he has no control, such as heat and cold, drouth and insect pests. Furthermore the farmer is rather conservative and is not quick to respond to new ideas — curtailment of land planting, use of automatic machinery, new devices for eliminating pests, utilization of waste products, etc.

In addition he requires much credit — short-term notes (nine months) for the raising of the crops, three-year loans for the raising of sheep, and long-term notes for the purchase of machinery and land. The government has assisted the farmers by encouraging banking institutions to loan money to them for longer periods (nine months) than the 90-day loans granted to industries.

Some raw materials, such as cotton, must be sold in the fall because the farmer needs the amount of capital he has paid out or borrowed during the year. He may have to sell at auction. This is not so with wool. He can obtain part or whole of the capital invested in the wool by selling his lambs for mutton and placing the wool in storage until the price is higher.

The single business man is usually limited to a small undertaking, such as the cotton or sheep farms described, the retail dry-goods store or haberdashery, or a small jewelry store, etc., where the capital is small, the risks small, and it is possible for one man to handle the problems of the business. Let us consider, for example, a tailoring establishment conducted by one man. The owner may or may not do all the work. He may be only the designer, and employ others for salesmen, cutters, repair men, etc. But however the business is conducted, he must assume all the risks and responsibilities. If there are profits, he receives them, but if there are losses, he is responsible for them. In case of failure he is held

personally responsible for all the debts. The legal existence of the business terminates with his death. Of course he has the satisfaction of conducting his business in the way he desires, and has a personal relation with his customers and his employees. While the capital invested is usually small and the return correspondingly small, the sense of personal achievement and a love for craftsmanship or for his work bring much pleasure to the independent entrepreneur.

**The Partnership.** The partnership was a popular form of organization a generation or more ago, but the corporation has now largely supplanted it in favor. The partnership organization usually increased the amount of available capital and divided both the duties and responsibilities of the entrepreneurs. A partnership is formed legally through a written agreement among the members specifying the various duties, financial responsibilities, and the division of profits among the members. The partnership has the advantages that it can be easily established, easily dissolved, and easily changed with respect to the relationship among the various members. It has the disadvantages that its legal existence terminates with the death of any partner and that each partner is legally liable for all debts of the partnership, even in excess of his investment.

**The Corporation.** Most business enterprises of any magnitude are organized in the form of a corporation. It often happens that one man or a group of men desire to establish a mill or large factory that requires more money than they alone are able or willing to invest in it. They obtain more money by organizing a stock company, in which they themselves buy as many shares as they choose, and then they induce others to pay for enough more shares to make up the capital that is needed or authorized for the business. A stock company consists of three or more persons, organized under a general law or by special charter from one of the States, and empowered to transact business as a single individual. A corporation like the American Woolen Company, or other textile organization, is established to engage in business with capital derived from the sale of stock that is transferable and may be bought and sold. The profits are distributed to the stockholders as dividends in proportion to their holdings of stock. The majority of stockholders

## COTTON MILLS

## New Bedford Stocks

	Bid	Asked
Associated Textile.....	..	8
do 6% preferred.....	..	9
Beacon Mfg. common.....	90	..
do preferred.....	..	64
Booth Mfg. common.....	2	3
do preferred.....	10	..
* City Mfg. Co.....	2	4
Dartmouth Mfg. Co.....	9	10
do preferred.....	72	..
Gassold Mill preferred.....	27	29
General Cotton Co.....	$\frac{3}{4}$	1
Gosnold Mill preferred.....	6	7
* Grinnell Mfg. Co.....	5	..
Hathaway Mfg. Co.....	24	25
Holmes Mfg. Co. pfd.....	$2\frac{1}{2}$	5
Kilburn Mill.....	12	..
Nashawena Mills.....	$4\frac{1}{4}$	5
Neild Mill.....	9	10
Nonquit Mill.....	$1\frac{1}{2}$	..
Pierce Mill.....	31	34
Potomska Mill.....	18	19
Quissett Mill.....	16	18
Soule Mill.....	26	28
Taber Mill.....	$2\frac{1}{4}$	3
Wamsutta Mills.....	$3\frac{3}{4}$	$4\frac{1}{2}$

## Miscellaneous

Berkshire Spinning, common.....	1	$1\frac{1}{2}$
do preferred.....	6	..
Dexdale Hosiery Co.....	..	75
do preferred.....	65	$67\frac{1}{2}$
Gosnold Mill notes.....	77	..
Pepperell Mfg. Co.....	27	29

## Fall River Stocks

Algonquin Printing Co.....	140	155
Barnard Mills.....	4	6
Border City Mfg. Co.....	1	2
Bourne Mills.....	9	10
Charlton Mills.....	30	33
* Cornell Mills.....	1	..
Davol Mills.....	$\frac{1}{2}$	$1\frac{1}{2}$
Luther Mfg. Co.....	50	55
* Merchants Mill.....	6	7
Narragansett Mills.....	1	2
Pilgrim Mills common.....	20	25
Sagamore Mfg. Co.....	19	20
Stevens Mfg. Co.....	$7\frac{1}{2}$	10
* Union Cotton Mills.....	1	3

\* In liquidation.

Bid refers to the price that one can sell at and asked refers to the price desired. Note that some of the stocks are above par (\$100), and others are below. The low quotations are for the marginal producers.

act in meeting and control the actions of the corporation. They are liable only to the amount of money they have invested for stock in the corporation.

Stock companies often issue two kinds of stock, namely: *preferred* stock, which consists of a certain number of shares on which dividends are paid at a fixed rate, and *common* stock, which consists of the remaining shares, among which are apportioned whatever profits there are remaining after payment of the required dividends on the preferred stock. Stocks are generally bought and sold by brokers, who act as agents for the owners of the stock. Brokers receive as their compensation a certain per cent of the selling price of the stock bought or sold. This is called brokerage.

The capital stock of a company is the amount named in its charter. A *share* is one of the equal parts into which the capital stock of a company is divided (frequently \$100). The par value of a share of stock is its original or face value. Stocks are sometimes issued with no-par value, in which case a nominal value is set, based upon the total capitalization and the number of shares issued. The market value of a share of stock is the price for which the share will sell in the market. The market values of leading stocks vary from day to day, and are quoted in the daily papers. The quotations on page 208 show the effect of the depression on textile stocks.

The corporation is managed by a board of directors elected by the stockholders. They are agents of the stockholders and must conduct the business as carefully as their own; in some cases they may be held liable both criminally and civilly. A majority of the board members in assembly have power to act, although they may delegate certain powers to an agent — as the agent of a mill. The chief officers of the corporation are the president, secretary, and treasurer. Sometimes in large corporations this number is increased by vice-presidents, auditors, counsel, etc.

Corporations secure their capital through sales of stocks and bonds. A stockholder is a part owner of a corporation and has a voice in organization, but a bondholder is only a creditor — he receives his interest but has no voice in management. However, some bonds provide that in certain emergencies, as failure to pay interest when due, bondholders may have voting power. A bond

is a statement of promise to pay a sum of money at a definite rate of interest at a certain time. It is secured by a mortgage upon the property of the corporation.

When property has already been mortgaged and a further borrowing is necessary, a debenture bond may be issued. Such a bond is not supported by tangible property with clear title. Debenture bonds are usually issued only as an extreme measure and only by the very strongest concerns.

When a corporation is unable to pay its bills, or meet its obligations in cash, it is said to be insolvent. This condition may be due to lack of capital, poor management, fraud, or neglect, etc. Such a condition means bankruptcy or the appointment of a receiver by the courts.

A business firm may under the above conditions petition the courts to adjudge them bankrupt in order to discharge them from their obligations, upon an agreement to pay their creditors a percentage of their debts. In this case they may begin business over again. If the creditors are not satisfied, they may ask the court to declare the organization bankrupt, close the business, and distribute the assets among the creditors.

Corporations such as large wearing apparel factories, mills, shoe factories, etc., often need to borrow money in order to meet extraordinary expenditures. When a corporation wishes to borrow a large sum of money for several years, it usually mortgages its property to a person or bank called a trustee. The amount of the mortgage is divided into parts called bonds, and these are sold to investors. The interest on the bonds is at a fixed rate and is generally payable semi-annually. Shares of stock represent the property of a corporation, while bonds represent debts of the corporation; stockholders are owners of the property of the corporation, while bondholders are its creditors.

Well-secured bonds are safer than stocks, as the interest on the bonds must be paid regardless of the condition of the business.

One can readily see why the corporation type of business is popular and has been a strong factor in business development during the last generation. The stockholders delegate their control to the officers they elect. If a stockholder dies, his share or shares are transferred, without any interruption to the organization.

Also, shares may be bought and sold in any number without changing the organization of the corporation.

The credit or borrowing capacity of a corporation is limited to the capital of the business. The credit of a partnership may be equal to the entire wealth of the partners of the firm.

**Coöperative Organizations.** In certain branches of industry, particularly among farmers, coöperative organizations have been formed. Members of such organizations have united to carry on some phase of marketing or other function for their common benefit. Under free competition it is rather difficult to control the supply of a commodity; for example, the amount of raw cotton in 1931. Because of the large number of farmers who plant cotton, all working more or less by themselves, and despite the government reports and the experience of the over-production in 1930, the production of 1931 again went above the demand. If cotton were under the control of a monopoly, it would be possible to regulate the supply so as not to exceed the demand and at a price that would give the farmers a fair profit. The government has encouraged the forming of coöperative associations among the farmers for the purpose of regulating the production and marketing of wool, cotton, etc. Such an association assists the farmers in regulating the supply and also stores the product until the prices are high. The coöperative associations are also able to secure better transportation rates. The government has created a Federal Farm Board to assist the farmers by loaning to the coöperative associations, securing better transportation rates, etc.

In addition, the coöperative associations have encouraged large-scale production, reduction of property taxes, use of labor-saving machinery, utilization of by-products, and stabilization of the price of cotton.

**Land and Labor.** Land and labor are spoken of as primary factors of production, while the business man and capital goods are derivatives of the other two and are called secondary. To illustrate: If labor is applied to the ground, cotton, a raw material for clothing, may be raised or produced. While the raw cotton raised will not directly satisfy the human want of clothing, it will do so after it is carded, spun, woven, and finished into a garment.

The cotton in different stages of development of manufacture into a costume forms intermediate products for additional production, which are called capital goods. The finished cotton dress is called consumers' goods.

Even in manufacturing, the land is an essential factor of production. For instance, a woolen mill is usually built on the banks of a river so that the dirty-colored solutions, the dyes liquor, and the wool-washing grease may be poured into the water and carried away. The location is unattractive, the mill itself with its smoking chimneys and heavy machinery is unattractive, but both are necessary for the production of worsted suiting from raw wool. They are called capital goods and are indirectly related to human wants because they contribute to the production of the finished commodity.

**Industrial Centers.** Previous to the development of the factory system there was no reason why any industry should be centered in one particular district. Upon utilization of steam power, the textile industry became subdivided into a number of industries, each one becoming to a great extent localized in convenient and suitable portions of the country. Thus in Bradford, the wool of Yorkshire (England) meets the coal of Yorkshire, and makes Bradford the great woolen and worsted center of the world. A similar thing took place in Manchester, where the cotton of America meets the coal of England under satisfactory climatic conditions, thus around Manchester is the greatest cotton manufacturing center of the world.

The same is true in America. Lawrence became a large worsted center on account of the great water power and the use of the river to deposit wool washings. Lowell and Fall River became large cotton centers due to water power. Haverhill became the center for the manufacture of women's slippers because of an early start and a supply of skilled labor. New Bedford became the center of fine cotton goods due to the climatic conditions — moist atmosphere, which is necessary in spinning fine cotton.

Similarly, Brockton is the center of manufacture of men's shoes; Providence and Attleboro are centers of jewelry supply because of a supply of trained labor and the low cost of living; Boston is the greatest wool market because of superior financial arrangements

with banks. Columbus, Georgia, has become a cotton center because of the nearness of the raw material, although developed later than northern cotton manufacturing centers.

Southern factories possess the advantage of nearness to the cotton fields and a climate whose mildness insures them against those interruptions which in severe winters are often causes of inconvenience and loss to northern mills. Other advantages over the North are cheaper land, and cheaper building material, fuel, and labor.

**Shifting Centers.** A similar grouping of industrial activities into special centers can be noticed in individual cities. The location of these centers may shift as the city grows and develops. Thus in New York, the silk industry, which, five years ago, appeared to be anchored around Thirty-fourth street and Madison avenue, is now conducted in large part from the district surrounding Fortieth street and Seventh avenue near the garment center. Cotton merchants, who started to move uptown several years ago, have centralized in the well-known cotton district of Leonard and Worth streets. The woolen district, though remaining close to Fourth avenue during the past decade, has changed somewhat in the last five years. Recently the drapery trades have shifted from their former totally different centers to a center above Thirty-fourth street and Park avenue.

**Capital Goods.** The labor of many may be increased by the use of tools. The following quotation illustrates the power of man with tools :

Man is weak of himself and of small stature. He stands on a basis, at most for the flattest soled of half a square foot insecurely enough, nevertheless he can use tools, can devise tools. With these the granite mountains melt into light dust before him ; he kneads glowing iron as if it were soft paste ; seas are his smooth highways ; wind and fire his unwearying steeds. Nowhere do you find him without tools ; without tools he is nothing ; with tools he is all. — THOMAS CARLYLE.

These tools represent part of his capital. They have value because of their use in aiding man to utilize his physical powers and senses to greatest advantage. These tools enable him to produce more wealth. Tools and machinery are capital goods, and while they do not directly satisfy any human wants they do assist us in the production of wealth that does satisfy our wants.

If we study the production of a commodity such as woolen cloth from the household system to the factory, we note that years ago the wool was raised on the farm, washed, carded, spun, and finished in the house of the farm. Today the wool is raised on the western ranches, sent east by railroad to storehouses, then to the woolen mills in Philadelphia, or other parts of the country. The machinery in the woolen mill may be made in Massachusetts and sent to Philadelphia. Thus we see that today under the factory system there is a more or less round-about method of production requiring much capital. The work in a large mill is highly specialized and the production great in various patterns. The woolen cloth and other commodities are produced in response to demand. The operatives work less hours and receive more pay, and the goods are cheaper under the factory or mill system.

Capital goods is divided into three classes: (1) the industrial plant with machinery, — *i.e.*, a cotton mill with the carding, spinning, and weaving machinery; (2) raw materials — raw cotton, raw wool, raw silk, such materials as come from the cotton plant, and animals such as silk worms; (3) food stuffs.

When cotton is harvested by the farmer, it is not ready for consumption and is not a consumable good. To the cotton manufacture it is a capital good, and he spins and weaves and finishes it into a sheeting, which is sold to the retail store as a capital good. The retail store sells it to the consumer, who takes it to his home, where it is actually used. The sheeting does not cease to be capital until it has been put to use by the consumer.

It is also possible to consider it as capital goods even when it is being used by the consumer. Thus, if the consumer is a worker, the sheeting assists him in obtaining a comfortable night's sleep, so as to allow him to regain his strength for the next day's work. Therefore the sheeting is consumed with a productive end in view and may be classed as capital. On the other hand, if the man who uses the sheeting is inactive and not performing useful services to society, the sheeting can not be classed as capital goods. In one case the consumption of the sheeting leads to an increase in production, while in the other case it does not.

*Fixed* capital is a term applied to capital goods such as cotton machinery, spinning machinery, and sewing machines, which can

be used repeatedly in the same operation. Cotton is capital goods that can be used only once, and is called *circulating* capital.

The machinery or equipment of a mill wears out in about ten years, more or less. The factory or mill buildings will last longer — fifty or seventy-five years. In order to make allowances for this wearing out, a certain amount, 10 per cent of the value of the equipment and a smaller per cent of the value of the buildings, is laid aside each year and is called a depreciation or replacement fund.

**Capital Funds.** In all types of business organization one must secure capital to pay rent or purchase a building and machinery and to pay the workers long before he receives money from the sales of his finished product. The capital for the plant or factory is obtained from the sale of stock and bonds. The success of the manufacturing or production depends upon: (1) skill of the workers, (2) ability of the managers in directing the workers, (3) up-to-date efficient equipment, (4) manufacturing a product that has a market or is in great demand. The capital necessary to buy raw material, pay the workers, and provide the money necessary to run the plant until the sale of the product, is usually obtained from bankers on notes.

The capital fund depends in general upon the productiveness of the people, their thrift, and willingness to save. Savings of a man, regardless of his station in life, take final form in money or credit which he puts into some business or bank. Thus the loanable capital fund of a community or a country represents the savings of the people who wish to allow other people the use of their capital.

Capital in any country can be secured if (1) opportunities exist for the profitable employment of money, (2) there is an adequate supply of properly trained laborers who are willing to work at reasonable wages, (3) there exist good business men or entrepreneurs ready and willing to engage in business and willing to assume risks, etc.

The South a generation ago offered opportunity for capital in cotton manufacturing because it was near the source of raw material, possessed a plentiful supply of laborers from the mountains who were willing to work at reasonable wages and were capable of being trained quickly, and had a group of successful business

men, many of whom had been trained in college-grade textile schools.

Some capital yields a large return, while other gives a small return. That part of capital which yields a small return — just sufficient to compensate its owner — is called the marginal unit of capital and of course is the least productive part of the country's capital.

Since capital tends to seek enterprises that give the highest return, and since competition is keen, it is only natural that the marginal supply of capital shifts from one industry to another, and the net returns tend toward a common rate of *interest*.

The textile and clothing industries are uncertain in their income because they depend in many cases on whims and fancies of the people — styles and fashions — and are seasonal in character. Therefore the greatest return on capital invested in these industries is obtained by men and women who have natural ability for this type of business, initiative, inventive ability along mechanical lines, and artistic ability as applied to wearing apparel.

A cotton merchant may borrow money from the bank on his note and have this money deposited to his name in the bank. Because he has this money in the bank, people have faith and confidence that he will pay, and they allow him to secure a larger stock of cotton goods on his standing — credit. The mill owner is able to borrow money from the bank on a note or mortgage, and with this money he is able to enlarge his plant, buy cotton when it is cheap and place it in storage until required, and increase the output of finished cloth.

Certain banking institutions like the International Acceptance Bank are able (a) to finance shipments to and from all parts of the world, (b) supply credit information about foreign merchants, (c) purchase foreign currency drafts, and (d) provide confidential information about financial standing and credit.

The principal factors of production: (a) capital, (b) labor, (c) business man, etc., can not be supplied at a moment's notice. While there is always much capital ready to be used for promising industries, we must remember that the existing trades have first claim on this capital because they have the experience and the credit that will appeal to those with capital. They can increase their plants and thus keep out, more or less, the newcomers.

Labor is not always plentiful and properly trained. The business man who will be the leader must also have experience, technical training, etc., which can not be developed at a moment's notice. All men are at liberty to enter any branch of the clothing or wearing apparel trades, but not all are properly equipped to be successful in the industry.

**Duties of the Entrepreneur.** With the increase of population came the development of cities and the desire to buy wearing apparel already made. The textile mills and factories began the practice of making wearing apparel for sale in advance of orders.

This naturally led to a demand for business men who could determine the kinds of wearing apparel required and the necessary quantity, and who had the ability to sell the wearing apparel when it was made. In other words, there arose a strong demand for competent people who could buy and sell as distinct from those who manufactured or made the wearing apparel. Trading or buying and selling will be considered in the following chapter.

The history of the manufacture of clothing shows that prosperity can be increased greatly (1) by selecting and producing the right kind of raw materials, (2) by manufacturing these more efficiently into finished fabrics and costumes, and (3) by more economical marketing.

The business man or captain of industry (*a*) engages and discharges the labor, which is the most important and expensive item in production; (*b*) he selects, secures, and assembles the plant or mill, that is, the buildings, machinery, and raw materials; (*c*) he selects the site for the mill either by leasing or buying; (*d*) he must secure permission from the community to do business by paying necessary taxes, securing the charter or license, and meeting other requirements; (*e*) he determines the business policies; (*f*) he assumes the risks and receives the profits.

The leader or leaders of a business are responsible for its success and naturally require vision, good judgment, courage, and energy; if they fail or blunder, the business will fail. If the ability is centered in one person, he is called the business manager, the enterpriser or entrepreneur. The compensation of the business manager or entrepreneur may be small or it may be great. He may even suffer a loss; it all depends upon the amount he receives for his

product above the cost. Of course in many lines of business, the manager assigns himself a definite salary such as he would receive from some one else, and then considers as profit what remains of the earnings above costs.

**Cost of Production.** We saw earlier that the price of any commodity tends to equal the cost of production plus a fair return or profit to the entrepreneur, presumably equal at least to his earning power were he employed by some one else. Thus the price of cotton cloth is expected to be sufficient to pay for the raw material, the wages of labor, interest and taxes, running expenses of the mill, and leave a fair profit to the manufacturer.

In production or in merchandising the maximum return depends upon the most effective concentration of the available production factors: (a) capital goods, (b) land, (c) labor, and (d) organization. We saw in an earlier chapter that in the cultivation of land, there is always a point reached when the application of additional labor and capital to a given area fails to cause a proportional increase in the yield. This law of diminishing returns can be applied to any factor of production. Thus in any given factory, there is a maximum point of efficiency reached beyond which it is not profitable to increase the amount of capital or labor invested. At that point the unit cost of production has been reduced to its lowest terms.

The cost of production in any particular factory is largely dependent upon the skill of the entrepreneur and his judgment in securing the most economical combination of the various factors of production. Thus if labor is cheap in a given locality and machinery expensive, it is more economical to increase the amount of labor. In another locality where labor is scarce, it might be more economical to increase the number of machines used.

The cost of producing textiles, wearing apparel, and services varies with different localities and different mills and factories. Some localities, like the South, may be nearer the source of raw material, labor may be cheaper, or a waterfall near may give low power cost. Then again, in the same locality, one mill may have more up-to-date machinery and better power transmission that gives maximum power at minimum cost. In the same locality, the cost of raw material and labor would be fairly constant, and

the difference in the efficiency of the power department or machinery would cause the difference in cost on the same material.

Some mills and factories are better organized as to the purchase of raw material and the manufacturer's operations than others. Thus one gingham mill may be able to manufacture a gingham at a cost twenty per cent lower than another mill. The cost of producing a commodity, such as a yard of worsted cloth, varies. If the plant is running full force, then the cost of a yard of worsted will be at a minimum. On the other hand, if only part of the departments are running full force, then the cost of the same worsted fabric must be higher to cover the overhead expense.

The market value of the cloth or wearing apparel tends to approach the cost of manufacturing at the greatest disadvantage, hence the mills or factories that have the highest costs are called marginal producers, because they are on the margin of the production and are more important in determining the market prices than any of the others. Of course it is assumed in the above explanation that there is free competition among all.

The textile and wearing apparel industries, as well as other branches of manufacture, are filled with marginal producers. While they may exist in prosperous times because there is a demand for their products, nevertheless as soon as the demand falls and the price goes down, they are not willing to sell and, if they do, they sell at a loss. These producers are on the edge of failure, and from this class are recruited the large number of failures and bankruptcies in times of depression.

Bankruptcy losses during the ten years 1921-31 increased from \$171,000,000 to over a billion dollars, and most of the increase was in the wearing apparel industries. The people to whom this money was owed, called creditors, have received about 5.1 per cent of the amount owed them.

Many mills and manufacturers of clothing and wearing apparel have large plants with large investments in fixed capital goods. In times of depression these mills and corporations may find it advisable to close out their investment, since holding the goods may mean that they will be out of style shortly, and thus cause the owner greater loss than by selling immediately.

**Demand and Supply.** Intelligent control of production in accordance with statistics gathered by the trade itself should point the way for textile men to control output and prices to the extent of not losing money on sales. This information should be collected by the trade organization, composed of the manufacturers of that branch of the industry, like the Silk Association of America, etc. In addition, every branch of the textile and wearing apparel industry has a trade paper that collects much valuable information and statistics with regard to the conditions of the trade.

The mill man, the dress manufacturer, and other manufacturers of wearing apparel, knowing the desires or wants of the consumers, are constantly manufacturing new things to satisfy these wants and exact only a price that will give a fair reward for their labor.

If the price received from the consumer is not sufficient to provide this reward, then there will be fewer producers and less production. This in turn will create a scarcity of wearing apparel and the consumers will be obliged to pay a higher price, as competition among the consumers will tend to raise the price.

When the price is raised, then more producers will enter the field and use their capital and energy in producing wearing apparel, and those already engaged will enlarge their plants so as to increase their output. The total production will be increased, and thus a larger supply will have a tendency to reduce the price.

While it seems that the consumer would more or less control the price of wearing apparel by refusing to buy until the price is satisfactory, nevertheless the desires of human nature, particularly for wearing apparel, are so intense that the consumer tends to satisfy these desires as long as he can afford to buy.

**Producers' Surplus.** We discovered in our study of price, in Chapter IV, that a normal exchange value is that resulting from a bargaining process between the marginal consumer and the marginal producer. In other words, commodities are usually exchanged when the marginal utility of the article *just equals its marginal cost*. Such an exchange value is called a *normal value*. If wearing apparel like silk hosiery sells above its normal value, it is due either to a monopoly of the hosiery — special brand — or to the fact that an unusual change has taken place in the demand.

Because the market price tends to equal the cost of production of the marginal unit, those manufacturers operating at the lowest cost of production will make a far larger profit than is received by the marginal producers whose costs are the highest. This larger profit accruing to the more efficient manufacturers is called the *producer's surplus* or differential gain.

**Joint Costs.** Occasionally a factory will produce one or more by-products in connection with the main product. For example, in manufacturing silk fabrics from throwing, there is a waste that is used in making a spun silk fabric — that is, silk that is carded, spun, and woven. The spun silk is called a by-product of the mill. The question may be asked, “Does the value of the thrown and spun silk fabrics together tend to equal the joint cost of production?” If the demand and supply of both products is normal, then the joint value of them will tend to equal the joint cost of their production. If there is a greater demand for the thrown silk than for the spun silk, or *vice versa*, then the market values are determined by the relative supply of the two, rather than by the cost of production. Because of this situation of joint costs it is sometimes possible for a producer to sell one product at a slight loss for a time if the return from the other product is yielding a profit sufficient to compensate and to cause the return from the two products to equal the joint cost of production.

**Principles of Management and Businesslike Methods.** Out of the experiences of the race have developed certain orderly methods of producing, buying, selling, and consuming clothing that have been found to be economical. The principles governing such orderly or economical methods of producing, buying, and selling are spoken of as principles of management, because these principles must be devised and carried out by a person called the manager-director — a person skilled in the conduct of business.

The fundamental principle of management as applied particularly to clothing and wearing apparel is organization. Organization is the arrangement of a number of men and women (called workers) with appliances called machinery, properly supervised and managed so that all of them will coöperate and produce the finished or semi-finished article economically and without waste

(efficiently). Organization is the foundation stone of all business, especially in the textile or wearing apparel industry.

Organization, whether in business or elsewhere, means coöperation — a working together for the common welfare. To bring together all the forces of business — employer and employees, machinery and capital — into a systematic relationship, is one of the first steps in securing the success of any business.

Human talents consist of certain physical, mental, and social qualities that may be utilized in business. All types of such traits, from the highly developed skills to the most unskilled labor, which must be closely supervised, can be utilized to advantage in industry. The effective coördination of these varied talents into production is the work of a skilled manager.

It is perhaps in the field of organization that the modern factory system differs most from previous methods of production. It may be of interest to learn the development of the mill organization in the United States.

**Factory Organization.** The early mill managers of cotton mills in New England began to arrange systematically the processes of manufacturing so that no labor would be lost in passing from one process to another. Since this system was first established, changes have been made, but the following summary will show the general organization of the factory.

The first large cotton mill was organized with a president as chairman of the board of directors and a treasurer as the executive head, who had the responsibility of buying the raw material and, through the selling house, of disposing of the finished product. The mill was separated into a number of subdivisions, such as carding, spinning, warp dressing, weaving, and finishing. Each subdivision was in charge of an overseer and his assistants. A superintendent supervised all overseers and had charge of the employees and their operations. The mechanic who had charge of the buildings and machinery, as well as the superintendent, reported to a resident agent who acted as general manager for the proprietors. This organization is the best method of operating a textile mill and selling its product.

This method of manufacturing textiles in America was different from that in England and European countries, where the

(a) carding and spinning and (b) weaving were done in separate mills. The American mill was built so as to have carding and spinning in addition to weaving, that is, the whole process of cloth making, under one roof. This method of organization was very successful from the very beginning.

**Sense of Achievement.** There is in every person a desire for achievement — the wish to accomplish something. This desire is satisfied in the successful accomplishment of certain acts. Thus the pleasure and satisfaction derived from the creative side of labor — the joy in craftsmanship — and the thrill of the entrepreneur in successfully overcoming competition, risks, and production obstacles, are among the real rewards of business. Money profit is one of the prizes of the successful business man, but it is not the only one. Indeed it is not the first or even the second prize. The first prize is, or should be, the satisfaction in rendering a service to the community and to society; second, the sense of achievement; and third, the good name or good will of the business man or firm.

Nevertheless, the part played by profits is extremely important. No man will do his best work unless he receives for his own use the fruits of his industry. The greater the wealth to be achieved in an industry the more assiduously will the worker in the industry labor. In their early development the textile and clothing industries offered great profit as an inducement. Therefore these industries developed very rapidly from the private homes where they were a part-time work to large factories where they became full-time occupations. The question of securing efficiency prompted the mill owners to experiments with various types of organization.

**Integration of Business Units.** Shortly after the Civil War a movement toward greater efficiency in industry took place. It began by eliminating "overhead expenses" as far as possible, and by combining small units into one large unit. The large units required machines of greater capacity and power.

Both "horizontal" and "vertical" combinations of units were carried out. The horizontal organization consisted of combining many cotton mills under one management. The vertical organization combined the (a) raising of cotton, (b) ginning, (c) spin-

ning, (*d*) cotton weaving, and (*e*) cotton finishing. In other words it was a combination of units that would give facilities for the production of the finished commodity — cloth — from the raw material of cotton fibers.

The combination of small units into a large unit naturally requires (*a*) a large amount of money (circulating capital) and machinery and equipment (fixed capital), (*b*) the utilization of one or more forms of power on a large scale to drive modern machinery, (*c*) employment of officials and workers of different degrees of skill and training, (*d*) standardization of definite commodities, — sheetings, towels, worsted fabrics, (*e*) extensive and varied markets.

There is a saving in overhead by combining small units because (*a*) the cost of erecting one large building equivalent in capacity to four units is considerably less than four times the amount required for a single unit; (*b*) each official in a large unit can supervise and direct more workers than one-fourth of the total supervisory force of the four units; (*c*) special research work can be carried on in a large plant at a less relative cost; (*d*) the utilization of by-products in a large plant can be carried on more economically than in a small plant; (*e*) the marketing and selling of the commodities in a large plant will be proportionately cheaper than in a corresponding number of small units; (*f*) the purchase of supplies can be done more economically by a large plant — through buying in large amounts; (*g*) there is an elimination of competitive advertising, — one form of advertising can be used for a large plant instead of four kinds of advertising for the four small units; (*h*) better freight rates can be obtained through shipping in large quantities — carload and train-load lots; (*i*) foreign trade can be obtained to better advantage by a large plant which allows the manufacturer to ship excess production to foreign countries.

Specialization of industry naturally requires a large market, since the organization of an industry in this way means large quantity production. If the demand in this country for a certain commodity is limited, such a commodity would naturally be produced in a small plant rather than a large one. Such a plant would not have extreme division of labor. For example, the weaver and loom-fixer in the small mill might be one and the same person. In

other words, the division of labor in an industry is governed by the extent of the market. Large markets mean much specialization, while a limited market means less specialization.

With the development of rapid and more extensive transportation there naturally arise new markets and demands for commodities. Thus, with the opening up of the South American countries came an increased demand for cotton goods.

Not all industries can be developed along lines of specialization. Only those industries that allow all operations and processes to be carried on together can be subdivided and organized along lines of specialization. The raising of wool, cotton, and silk will not allow much specialization. On the other hand, the manufacture of raw cotton into sheetings can be organized so that all operations can be carried on simultaneously.

Today the most effective organization of a cotton mill is that described in the following paragraphs.

**Organization of Cotton Mill.** The president of a cotton mill is usually not the active head of the business; his position corresponds to that of the chairman of the board of directors in the usual banking or mercantile corporation. The mill treasurer is, on the other hand, the chief directive force, and he performs the two all-important functions of buying the mill's raw cotton and selling its product, either directly or through other channels. In the mills of New Bedford and Fall River, which make chiefly gray goods, the treasurer usually has his office at the mill. In most other New England mills the treasurer is usually a member of a selling house and is frequently the treasurer for more than one mill.

When the treasurer has his office in the mill, the man who has charge of the actual operation is known as the mill superintendent. His functions include the general management of the plant and the purchasing of supplies other than cotton. When the treasurer maintains his office in a selling house, the operating head is known as an agent and enjoys a greater degree of responsibility and independence. There are, of course, a varying number of minor operating chiefs in charge of sundry departments.

The average New England cotton mill contains about 50,000 spindles, while the southern mill runs about 25,000. The vast majority of mills do both spinning and weaving, although some

southern mills sell yarn, and some Pennsylvania establishments do nothing but weave. Of the entire number of spindles in the country, 83 per cent, and of looms, 97 per cent, are in the mills that do both spinning and weaving.

In contrast to the tendency towards unification in spinning and weaving is the ever-increasing segregation of the converting plants.

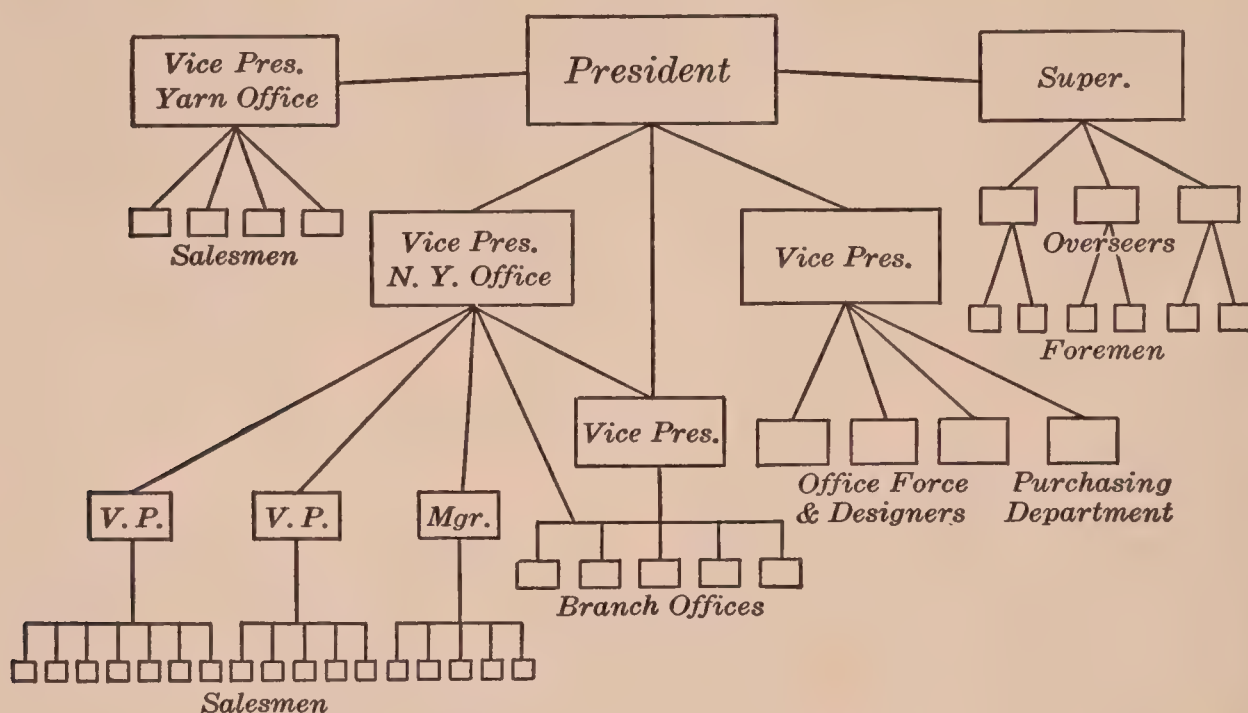


CHART SHOWING MILL ORGANIZATION

The rise of the merchant-converter, the growing demand for a great variety of finishes, and the fact that converting is very much cheaper on a large scale, have all brought about an increasing tendency on the part of the mill to sell its cloth in the gray, or to have it finished on commission.

While a few large worsted mills spin their own yarn, this is the exception rather than the rule. On the other hand, the knitting mills finish their product for the market themselves, and sell either direct or through a selling house.

**Efficiency.** The success of the production and distribution of textiles and wearing apparel depends upon each step being carefully planned so that there is no waste — that is, with the highest efficiency. This means that all the processes must be coördinated with those that precede and those that follow, and that there must be full coöperation among the workers.

The following organization is that of a textile mill at South Manchester, Conn., that has been conducted by the Cheney

Brothers for several generations: The manufacturing plant, exclusive of certain subsidiary utilities, occupies approximately thirty-six acres of floor space. The various operating divisions, such as the velvet mill, broad-goods weaving mill, dressing mill, spun silk mill, yarn and dye mill, throwing mill, cravat mill, velvet

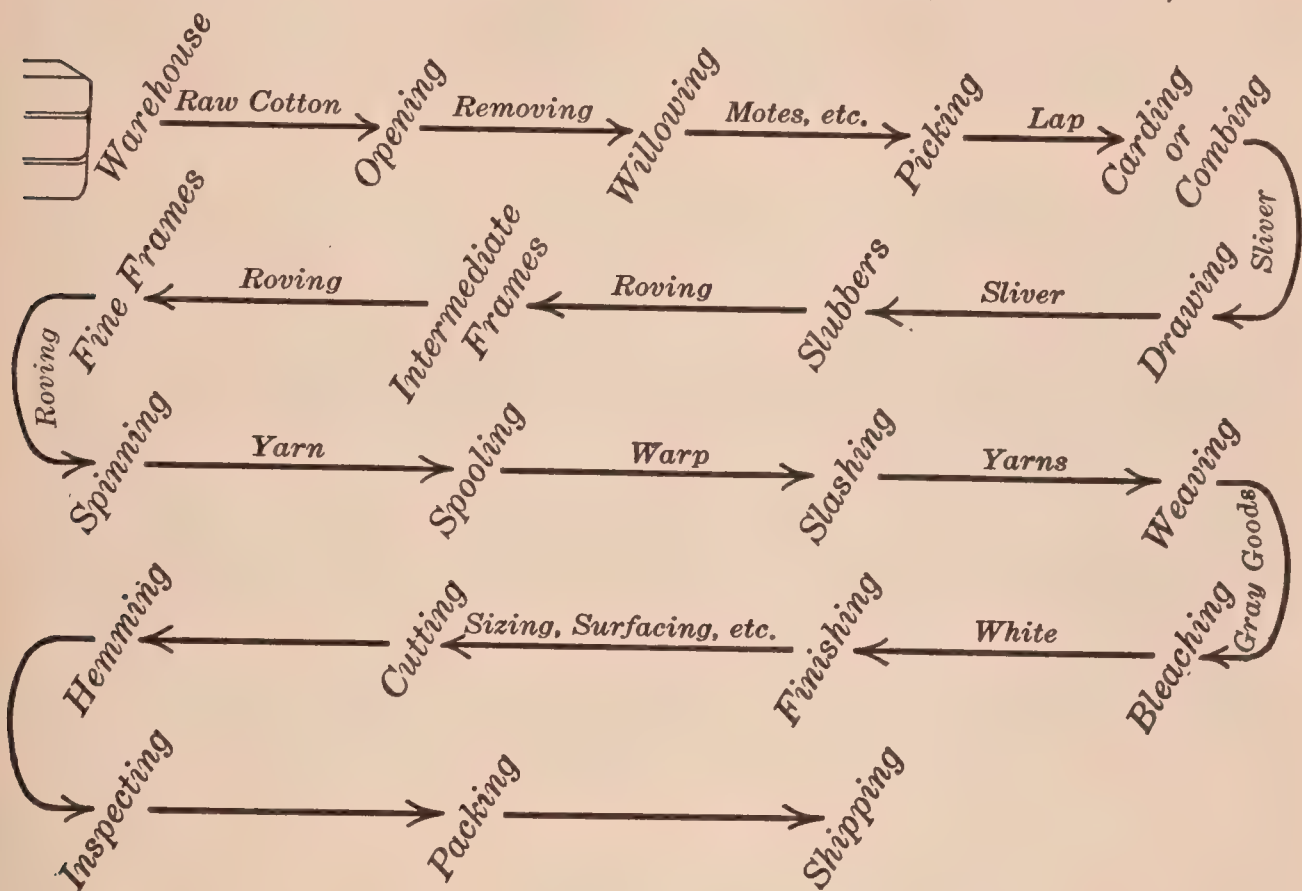


CHART SHOWING PROCESS OF MANUFACTURE

weave mill, machine shop, and stores, are each housed in a separate building or buildings, permitting segregation and efficiency in the conduct of the working divisions of the enterprise. In addition the company also owns an assembly building and three community boarding houses where employees may obtain food and lodging at nominal rates. In addition, 450 rentals in about 300 buildings owned by the company are rented to employees and their dependents. One can readily see that the size of such a silk mill organization makes it the leading industry in the community.

The duties and titles of the persons directing such an organization are as follows: All divisional authority is derived from and is subject to the board of directors and the president. A main area of organization within the company is known as a division, centralizing under one head correlated functions of administration and production, as the broad-goods weaving or the velvet division.

Further subdivisions are the department, section, branch, and room. The line of authority extends directly down through the executive heads of these subdivisions. That is, the head of a room is subordinate to the section head, the section head to the department head, and the department head to the division head. Thus, the division, including one or more departments, is under a single executive known as a manager. In this capacity he is a superior executive and may have under him one or more department heads, known as foremen.

Departments are of two classifications: the staff department, charged with specific portions of the administration and service activities incident to the functions of which it is a part; and the production department, engaged primarily in production, physical maintenance, and operation. Subordinate department executives in charge of these two branches of activities are respectively a department manager and a superintendent. Section heads are known either as section managers or section superintendents, according as the section is a subdivision of a staff or of a production department.

A further occasional unit of organization is the branch or subdivision of a productive section which is physically isolated from the main part of the section. The head of a branch is known as an assistant superintendent and reports directly to the section superintendent. The executive in charge of a room within a section is known as a foreman.

The Cheney Brothers organization normally comprises about 4000 people, exclusive of the sales force, divided approximately as follows: 89 per cent wage earners, 6 per cent clerical force, and 5 per cent supervisory and special employees, including managers, superintendents, foremen, and other salaried persons. Sixteen per cent of the present salaried group were promoted from clerical positions and 58 per cent from mill positions, while 72 per cent of the clerical force were promoted from minor mill positions.

In addition there is a large sales force with salesrooms in New York and other large cities.

**Essential Elements of Success.** The duties of each official and worker in a business establishment should be carefully defined so there will be no overlapping, and each should be allowed to do his

work without interference from others. Thus he can contribute to the business his maximum powers, ability, and best judgment.

As an incentive to good work and to inspire the confidence of workers, certain assurance should be given of permanent employment and a gradual increase of wages. A successful business organization must have loyal and enthusiastic workers, and anything that disturbs these qualities retards the maximum efficiency.



CHENEY BROTHERS' FACTORY, SOUTH MANCHESTER, CONN.

The best results can be obtained only with a willing and efficient working force supplemented by highly efficient equipment, buildings, power plant, and organization of processes so that there is no duplication of effort or waste motion. The setting up of such a system requires detailed study of the individual problems of production. Too much system that is borrowed from other organizations tends to hamper the business and is called "red tape." *System* is what one actually requires to transact the business efficiently, and *red tape* is the system borrowed from another factory or organization.

The success of system depends to a large extent not only on coöperation but also upon coördination — the working together of the different departments with the least amount of friction. This requires careful planning of all work, up-to-date equipment and tools, prompt arrival of raw material and rapid transportation of the finished products to the consumer, prompt attention to defects, and repairs to tools, machinery, and defects in the organization.

Efficiency experts are frequently employed to go through business organizations and eliminate waste and useless motions and make suggestions for improvement.

**Division of Labor.** Specialization is the keynote of efficiency today and has been growing since the rise of the factory system. The work of the old-time craftsman — such as a shoemaker or tailor — has been subdivided into a large number of processes. To illustrate: In a shoe factory there are over 100 distinct operations, each requiring a specially trained worker. The same is true in making a suit of clothes in a factory. Let us study the operations in the manufacture and the repair of shoes and note the advantages and disadvantages of such highly specialized factory organization.

**Shoe Manufacturing.** The principal methods of manufacturing shoes are the following: Goodyear welt; McKay; turned; standard screw; pegged; nailed.

Shoes are manufactured in up-to-date factories, employing hundreds of operatives. The modern shoe factory is divided into six general departments: (1) the sole-leather department, (2) the upper-leather department, (3) the stitching department, (4) the making department, (5) the finishing department, (6) and the treeing, packing, and shipping departments.

In some sections of the country, several of these departments are designated by other names. The stitching department is often called the fitting department; the making department, the bottoming department; and the sole-leather department, the stock-fitting department. The departments are popularly termed "rooms" for brevity.

A shoe factory is designed so as to have a width of about fifty feet for each room, while the length is determined according to the number of shoes to be produced. A width of about fifty feet gives plenty of daylight and ample room in the center of each department, which is essential in shoemaking.

Shoe factories are usually about two hundred feet long, although many are nearly four hundred feet and a few exceed this length, running as long as eight hundred feet. Some are built in the shape of hollow squares, while others have wings added which give almost as much floor space as the original building.

The average factory has four floors. The first floor, or basement, is occupied by the sole-leather department. The next floor above includes the treeing, finishing, packing, and shipping departments, and also the office. The third floor is devoted entirely to the making or bottoming department. The top floor is divided so that the cutting and stitching departments have each half a floor.



SECTION IN A MODERN SHOE FACTORY

There are several exceedingly large factories in this country that find it advantageous to divide the factory into more departments. For example, the cutting room is divided, so that the linings and trimmings are cut in separate departments. The making room may be divided so that the lasting is set off as a separate department, on account of the many workmen and machines employed. In the same way there may be a division of work so that the packing and shipping can be set apart from the treeing. Again, in the sole-leather room, the making of heels and the fitting of the bottom stock may become independent departments.

The system of making women's shoes is practically the same as that used for men's shoes except that in a great many factories the method of preparing the bottom stock is somewhat different. Most manufacturers of women's shoes do not cut sole leather, but buy outsoles, insoles, counters, and heels already cut or prepared.

These soles are in blocked form and large enough so that they can be cut or rounded by the manufacturers to fit their lasts. The counters, when bought, are all ready to put in the uppers, while the heels are ready to put on the shoes. When a manufacturer of women's shoes cuts his sole leather in his own factory, the system is the same as that in the men's factories.

In women's factories where sole leather is not cut, there is not a complete sole-leather department. Instead there is what is called a stock-fitting department. Independent cut-sole houses sometimes supply the soles to manufacturers. The same system of buying parts ready finished also applies to many other parts of the shoe, such as the top lift, half sole, welt, rand, etc. Manufacturers of both men's and women's shoes often buy trimmings and other parts of the upper all prepared.

A large proportion of the manufacturers of men's shoes are now buying heels already built, while fully nine-tenths buy counters already molded. The soles, and other parts that are needed for a shoe, are manufactured in different qualities and grades, so that a manufacturer can buy any grade of sole he wants. It is therefore considered an advantage to buy some parts, instead of cutting them. In a side of sole leather there are twenty-five or more different qualities and grades of soles, and very few manufacturers, especially in the women's trade, can use all of these. The greater variety of shoes a manufacturer turns out, the more advantageous it is for him to cut his own sole leather and prepare all parts in his own factory.

In this country, the number of factories in the shoe trade appears to be growing less and the average factory larger. It is estimated that there are at present something like 1500 factories in all. These range from the smallest output to the largest. The average factory may be said to produce about 1200 pairs of shoes per day. Many turn out 5000 pairs daily, while a few manufacturers turn out 10,000 or more pairs. Several manufacturers and firms have a dozen or more factories and have a total output of between 20,000 and 30,000 pairs of shoes a day. There is no such thing as a trust or monopoly of any kind in this trade, and there never has been.

In all factories and all classes of work, the number of pairs of shoes in a "case" is usually one that can be divided by twelve.

Thus a case may be twelve, twenty-four, thirty-six, forty-eight, sixty, or seventy-two pairs. In children's work it is often sixty or seventy-two pairs. Of course, a case of shoes may contain any number of pairs, but the numbers given above have always been used in regular work.

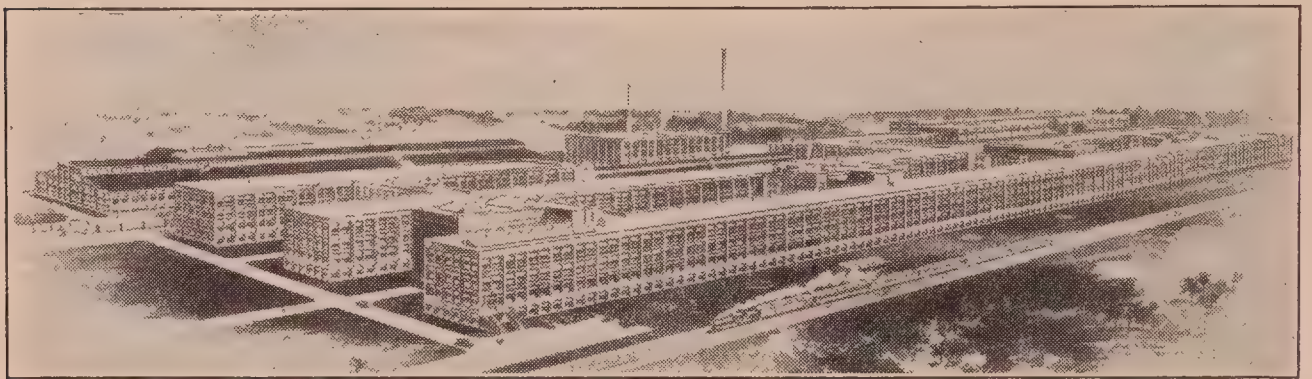
Cases of shoes may differ, but all pairs of shoes in any one case must be made exactly alike. All shoes are sold in cases, with the exception of custom work, single-pair orders, or samples. In making men's heavy shoes, or working shoes, the regular case was formerly sixty pairs or thirty-six pairs, but the tendency of late has been to have a standard case of twenty-four pairs. In the men's fine trade, the regular case is twenty-four pairs, while in the women's it is thirty-six pairs. Long boots for men have always been made in twelve-pair cases.

Shoes are sold by samples, sent out with a traveling salesman. As fast as he receives an order, he sends it to the main office. Here the orders are subdivided and sent to the factories making the goods. For example, an order for five dozen pairs of men's shoes of a certain style is received by the main office from the traveling salesman. This is sent to the factory in the form of a typewritten order, covering the general description and sizes in the proper form, for each case is made according to the specifications on the tags made out in the office. These tags specify the kind and quality of sole, heel, and upper, how stitched, the last to be used, how bottomed, finished, treed, and packed. Everything is marked plainly on the tags so that a buyer can have any shoe made just as he wants it.

This order is then sent from the factory office to the cutting room, where a clerk makes out long tickets. Shoes go through the factory in lots of twenty-four pairs, each lot being called a "job," and when finished making a case of shoes. The long ticket is made in duplicate, and is perforated so it may be tied to a "job" of shoes. Both parts of the ticket are made out to indicate the various operations with the specifications as to detail. The lower part is sent to the stock or sole-leather room, while the top part remains with the uppers, which are cut in the cutting room. While each part of the ticket is sent by a different route through the factory, they finally meet when the shoes are assembled into finished products.

In addition to the long tickets already described, two other tickets are made out, the top ticket and the trimming ticket. The top ticket is sent to the leather bins of the factory, where the sorter knows by experience exactly the amount of leather required to cut the order, and is careful to see that it is all of uniform quality and free from blemishes. He rolls the leather in a bundle, attaches the ticket, and sends it to the cutter.

In the cutting room there are three classes of cutters: (1) the cutter of trimmings, who cuts lace stays, top facings, back stays,



FACTORY OF UNITED SHOE MACHINE CORPORATION, BEVERLY, MASS.

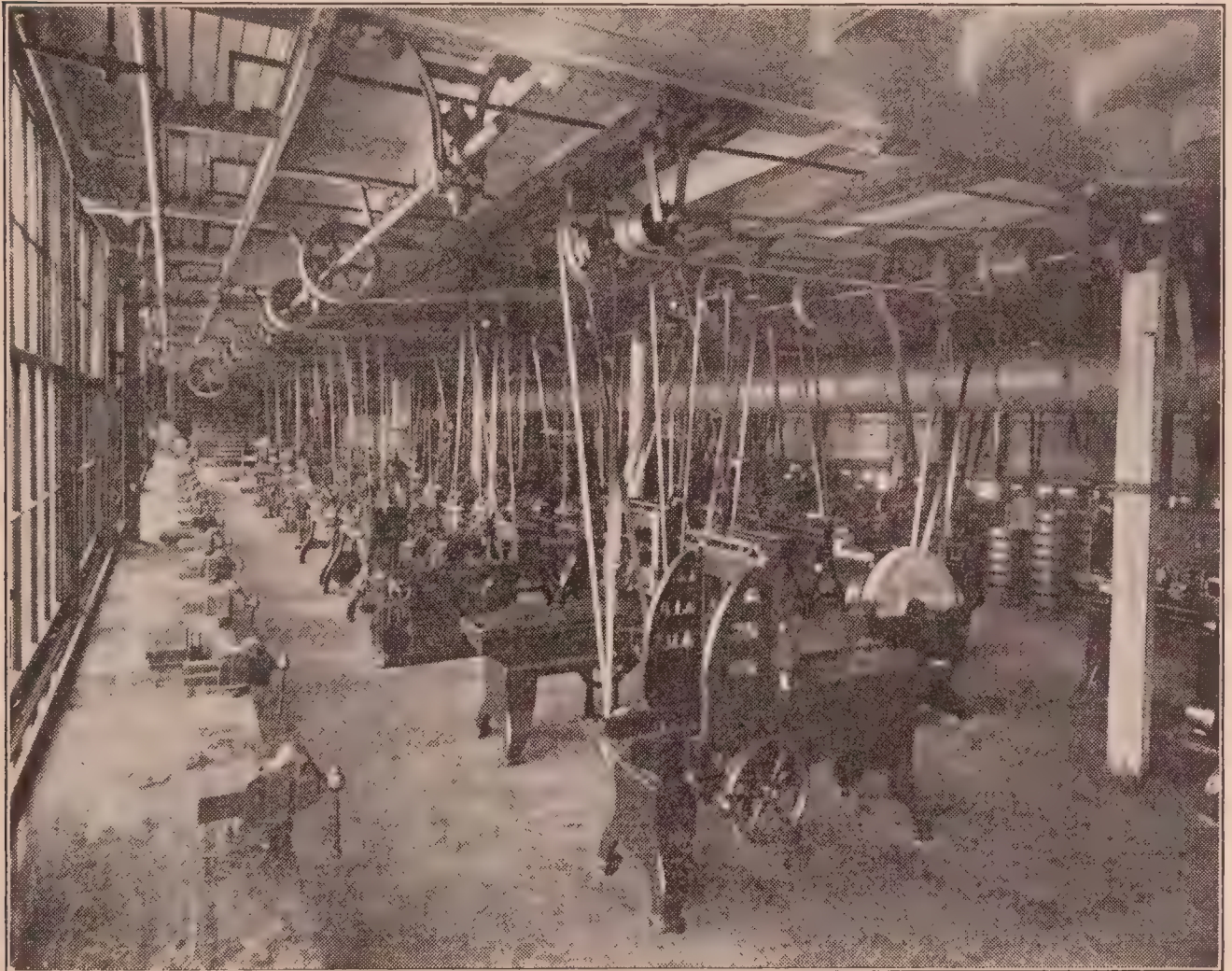
tongues, etc.; (2) the outside cutter, who cuts quarters, vamps, tops, tips, etc.; and (3) the lining cutter, who cuts cloth linings.

**Monopoly of Machines.** In boot and shoe manufacturing there is a condition that is peculiar to that industry and no other. The machines for manufacturing are leased by one company and can not be purchased. The company owning the patents leases the machines on a rental basis and agrees to keep them in good running condition. Of course such a method means that the machine builders have a form of monopoly, but in this case the monopoly has really proved a blessing to the industry, and has been upheld by the courts.

In order to understand the conditions that have brought about this situation it is necessary to go back two generations in the history of shoe manufacture. Up to 1860 shoes were made by means of practically the same tools that were employed in the early days of Egypt. These early tools were depicted as early as the 14th century B.C., as part of a sandal-maker's equipment. To the curved awl, the chisel-like knife, and the scraper of that time, the shoemaker of the last century had added only a few

simple tools such as the pincers, the lapstone, the hammer, and the variety of rubbing sticks used for finishing edges and heels.

Efforts had been made all over the world at different times to perfect machinery for shoe production, but it remained for the



VOCATIONAL SCHOOL SHOP FOR TRAINING MACHINISTS TO MANUFACTURE SHOE MACHINERY

shoemakers of the United States to invent such machinery. At the time of the Civil War the scarcity of shoemakers due to the large numbers who went to war caused a great demand for machinery to replace the workers.

When these machines were first invented, it was found impossible to sell them. So the machine builders asked the shoemakers if they would permit the machines to be installed free of charge, with the understanding that the shoemakers were to pay to the machine owners a small part of what the machine saved in production costs. To obtain this money for the use of machines, often as small as one-third of a cent per pair for the smaller sized shoes,

McKay, the inventor, issued royalty stamps, which became a very important factor in the early days of machine-made shoes. This method of renting machines became the regular practice in the shoe industry and has continued up to the present. Special mention is made of it at this time for the reason that it had two important bearings on the future of the industry.

First, it permitted manufacturers to procure machinery which they never would have been able to secure otherwise through lack of capital. Second, and probably more important, it developed a type of service which is not duplicated in any other industry. In shoe production the word "service" was known long before its place was determined in any other line of business. McKay quickly found that to get his return for the use of the machines it was incumbent on him to keep them in operation, and to that end his machines were so made that parts were interchangeable. He organized a corps of expert men who could be sent wherever machines required replacement of parts or readjustment.

**Modern Method of Repairing Shoes.** Note the adaptation of machinery to shoe repairing. As the shoemaking industry has become more and more perfected, there has been an increasing interest taken in shoe repairing. A medium-priced shoe of today may often be in good condition to be heeled and soled twice. Although in the past many shoe stores and departments had their shoe repairing done by outside shops, the tendency today is for every shoe store to have its own repair department. This method has resulted largely from the development of machinery for shoe repairing, which is revolutionizing the business to such an extent that in a few years repairing by hand will be among the lost arts. With the new inventions for restoring upper leather, and improvement in machinery for shoe repairing, repair departments will very soon be but little short of miniature factories.

The machinery ordinarily used consists of the Goodyear stitcher, used for attaching soles to Goodyear welts by the lock-stitch method. This machine is identical with those used in factories making Goodyear welt shoes; and there is also a heel trimmer, a bottom finisher consisting of a rapidly revolving roll covered with coarse and fine sandpaper, and an opera heel builder for forming concave heels. There are two heel machines used for tan and white heel

work, one heel being covered with a white cloth, and the other with a coarse brush. Adjoining these are usually the shank and heel finisher, capable of smoothing and highly polishing a shank or heel in about a dozen seconds; the bottom finisher, that grinds and smooths down the new sole; and a machine consisting of a heavy horsehair brush used for rubbing off dirt before the shoe is finished. Another useful part of the equipment is an edge setter, which is also identical with the kind used in factories. The shoe stitching machines and the parts used in finishing are all operated on one long shaft, rapidly revolved by the aid of a motor. It is a fact that a shoe can actually be soled and heeled in less than six minutes.

Five or six men are often employed in a repair department. When the customer's shoes are brought in, one of those men cuts off the old soles and traces an outline of the new soles on a block of the very best oak leather. After these are cut out by hand in rough form, they are soaked in water and channeled; that is to say, a part of the sole in which the stitches are to be run is turned up. A second man, by the use of the Goodyear stitcher, joins the sole and welt together with a very strong and tightly drawn lock stitch. This is a large machine with a curved, barbed needle and awl and a shuttle, and it sews through an inch of leather with the greatest ease and speed. There are from 150 to 200 stitches in each shoe; moreover, every one of them is locked with heavy wax thread, so that there is no chance of their ever giving way. If one stitch should break, the other stitches would remain intact, as they are independent of each other. Both soles are stitched on in a little over half a minute without breaking a thread or stopping the machine.

A coating of rubber cement is now placed in the edges of the outsole, and the lip of the channel is smoothed down so that the stitches are entirely hidden when looking at the bottom of the shoe. The edge trimming is done next with the aid of a rapidly revolving wheel, which trims the edges square and true in about forty seconds. After this, the shank is finished on a rapidly revolving wheel covered with emery cloth.

Bottom finishing is the next step. This is done on a machine having two long cylinders, one covered with fine and the other with

coarse sandpaper. These cylinders revolve rapidly, and the operator uses the coarse sandpaper for scouring the dirt and old finish off the leather, and the fine sandpaper for finishing the sole as smooth as that of any new shoe.

The brushing-in or smoothing is next done by the horsehair brush we have mentioned above. A preparation called a bottom-polishing wax — a sort of white wax — is placed on the brush machine. The brush now smooths the surface of the sole, filling in all small holes with wax and leaving it absolutely perfect. Finally, the shoe is placed against a rapidly revolving brush which finishes the uppers with a luster that would make any ordinary bootblack green with envy. Another operation that fully completes the process is the hardening of the edges of the sole with hot steel, a process that produces an edge as hard as iron. When it is polished with a black dye, it looks exactly like the sole of a new shoe.

A few words are necessary with regard to the heel. The old heel having been removed, several lifts of new leather in rough form are tacked on. The shoe is then taken to the heel trimmer and is formed correctly and then smoothed down to a brilliant surface on the finely covered revolving wheel. In a few seconds it is stained, smoothed, and polished. In less than six minutes the shoe is ready for the customer.

**Clothing Establishments.** In order to turn out the greatest amount of wearing apparel, the clothing industry is highly organized and standardized, so that each worker is a specialist in one phase of production. The organization of the industry requires: (a) owners or proprietors, (b) a general manager of the whole plant, (c) designers and stylists, (d) a superintendent and assistant superintendents of each department or room, (e) examiners and shrinkers of fabrics, (f) cutters, (g) operators of machines, (h) inspectors, etc. Each employee is trained in one phase of the work, so that he becomes skillful in that branch. Some specialize on high-grade and others on low-grade clothing.

Within the last generation a tremendous change has taken place in the manufacturing of wearing apparel. Originally clothing was made on a large scale in congested old buildings and tenements, called "sweatshops," where the workers toiled long hours, sometimes under unsanitary conditions. Part of the manufacturing

was sent out to poor families who did a great deal of the stitching. But today special buildings for the manufacturing of clothing have been erected, with up-to-date, well-lighted workrooms, all sanitary conveniences, and automatic machinery, so that we may say that clothing is now manufactured under the best possible conditions.

An example to illustrate the procedure may be interesting. In a cloak factory when the fabrics are received every piece of cloth



CUSTOM MANUFACTURING SHOP SHOWING THE DRAPING AND MATING OF THE CLOTH

is thoroughly examined by experts with regard to measure, texture, and color, and is then sponged by special machinery. All smooth cloths and those with finished faces are sponged by copper rollers, and the machinery is so arranged that from the time the cloth starts until it is folded dry, it is not touched by the operator. The cloth is then ready for the cutters, with all its imperfections marked. Each cutter has a separate check upon which have been entered the particulars about the cloth, style, and proper patterns. If the quantity is large enough for the cutting machine, the cloth is marked and laid in folds, but small pieces are cut by hand with

shears. After the cloth has been cut according to the provided patterns, the bundles are carefully compared with the orders, and a ticket is made for each garment. On this ticket is a place for each worker to put his or her number, so that a complete record is kept of every hand that works on the garment. The garments then go to the seamers, who seam them on machines specially adjusted for that particular work, and provided with a fixed gauge that



WORKROOM SHOWING FORMS PARTIALLY DRAPED IN MUSLIN

insures a perfectly uniform seam. Expert seamers can work at machines that make 3000 stitches a minute.

For the detection of any possible mistakes and imperfections in the fit, the garments are tried on models before being sent to the trimmers. The collars, cuffs, facings, etc., of each garment are cut according to the style designed, and with the "body" are sent to a workman who particularly excels in that branch of the work. After leaving the finisher the garment is inspected again by the foreman, and if it is not satisfactory, it goes back to the workman for alterations. After the making of buttonholes and the sewing on of buttons and ornaments, the garment goes to the presser. It then passes to a final examiner and a model, who are responsible for the fit and workmanship, and who see that the materials and trimmings are right, and that any changes that may have been ordered to

suit certain customers have been properly made. The garment is then ready for packing and shipping.

Records of the shape, cloth, trimmings, buttons, and any other parts of the garment are kept in duplicate, so that a copy of any garment can be made at any time. Sometimes cloaks that are in fashion in the East do not reach the far West until weeks afterward, when some particular style may be favored more than



WORKROOM SHOWING MANUFACTURE OF FUR-TRIMMED CLOTH COATS

another, and the orders will be largest for that style. By turning to the records, exact duplicates of any style can be made, provided the material is in the market.

One of the most responsible positions in a cloak factory is that of the model or "figure," and the prosperity of an establishment may depend upon securing good ones.

Let us make a comparison of the making of customized men's clothing today and a hundred years ago. The making of such clothing is essentially a handicraft even today.

A hundred years ago customized men's clothing was made in a small establishment under the merchant tailor, — who was usually the designer, — several journeyman tailors, and a few apprentices,

The merchant tailor had a limited supply of fabrics to select from.

The journeyman tailor of the early days was a general all-round tailor, not a specialist. He made all kinds of garments — coat, trousers, vest, overcoat, etc., and did it all himself, from shrinking and cutting out the cloth to the final pressing.

The merchant tailor usually took the measurements of the customer and assisted him in selecting the fabric. Then the cloth



MILLINERY ROOM SHOWING A CUSTOMER TRYING ON A HAT

was shrunk, and a pattern made, based upon the measurements. The cloth was cut from the pattern and then the pieces were stitched together by hand with the trimmings. One tailor would do all the work on the suit. The journeyman tailor in the custom shop follows a round of minor operations which keep him constantly changing from basting to stitching, to pressing, to basting again. There are thirteen different operations in making one pocket, and when he has made this pocket he has made only a very small part of the suit.

All stitching was done by hand up to 1865. At that time the sewing machine was placed on the market. One sewing machine could do the work of ten men on certain types of stitching.

Since people usually order or purchase clothing at the beginning of each of the four seasons, it follows that tailoring was seasonal.



INTERIOR OF A WELL-DEVELOPED CLOTHING MANUFACTURING ESTABLISHMENT, SHOWING GOOD LIGHT AND SURROUNDINGS

There were brief periods of being very busy and longer stretches when there was no work at all. For the worker this meant long hours at top speed for a very short time and then weeks together when he was "out of a job."

For the master, no business meant no profits. So when work was slack, they had their workers make garments of the cloth left

on hand. It was not logical for the master tailor to offer these ready-made garments to his own regular patrons, and thus curtail his custom business, so he tried to dispose of them in other channels. Thus the ready-to-wear business started. Some employers began to specialize in this field and became manufacturers of ready-to-wear clothing.

Those tailors who were a little more aggressive and successful than the average soon developed business beyond their own ability to produce. So they employed assistants and had each do the work for which he was best fitted. Those most skillful with the shears spent all their time cutting out the garments. Those most skillful with the needle did only the fine needlework. Less skillful workers handled less important details in making the garments.

Thus the ready-to-wear clothing business began as an after-part of the customized clothing. It has grown by leaps and bounds. In fact the rise of the ready-to-wear clothing business, both wholesale and retail, has been so rapid that most men of middle age can span the entire period within their own memory. The success of the industry in conquering its shadowy past, in overcoming suspicion and prejudice, has been so complete that it is interesting to consider the factors which have contributed to its present-day supremacy.

In making very cheap ready-to-wear clothes, and even for clothes of medium good quality, one thickness of cloth is laid on another until a pile is built up — perhaps twenty thicknesses high, or in extreme cases, fifty. Cardboard patterns of the exact size wanted for each individual piece of cloth that is required in making the suit, some twenty in number, are laid out on the cloth, as close as possible, and the outline of each pattern is marked on the cloth with chalk.

Then a band saw driven by an electric motor cuts through the pile along the chalk marks, cutting out the parts for as many suits as there are thicknesses of cloth in the pile. Since the heavy pile of cloth is soft and yielding, at the bottom of the pile the pieces cut by this method are liable to be a little different in size from those at the top.

A different person performs each of the different operations in assembling the parts of the clothing, and does nothing else, week

in and week out. The baster does nothing but basting, the machine operator does nothing but run the sewing machine, the presser does nothing but pressing, and so on. In this way he acquires both a speed and a skill which would be impossible of attainment on the part of a man whose time is split up among many different kinds of work.

Formerly the measurements were selected so as to fit as wide a range of figures as possible by being made loose, baggy, and shapeless. In those days there were no investigations of average proportions so that each garment might be made to fit a definite figure such as (a) tall stout, (b) tall thin, (c) tall medium, (d) medium stout, (e) medium medium, (f) medium thin, (g) short stout, (h) short thin, (i) short medium, etc.

As time went on more and more clothing houses of the cheap and medium types were started, competition became still more bitter, and prices and quality were forced still lower. More and more was taken out of the materials, the methods of tailoring, and the pay of the workers, until practically all ready-to-wear clothes were made by underpaid people working spasmodically at high speed in very undesirable surroundings. The resulting garments were totally lacking in style, quality, and tailoring, and were known as "hand-me-downs."

In many cases the cut garments were let out to contractors who sent the cut pieces to women and children at homes to do the stitching. These young children often worked long hours in dark and stuffy rooms and kitchens. Such homes were usually in tenements and when used for producing clothing came to be known as "sweatshops."

This cheap ready-to-wear clothing found a market because it was cheaply made and could be sold at a low price. Merchant tailors, on the other hand, who made custom-made clothing, protected themselves against this new competition by stressing the quality of their product. From this it is evident how rapidly and how naturally the two branches of the trade became entirely distinct, one selling its product on the basis of low price, the other on the basis of quality.

As time went on, the manufacturers of ready-made clothing began to look after the selling of the garments to clothing stores.

In this way, they could do an extensive business with a small organization and with very little capital.

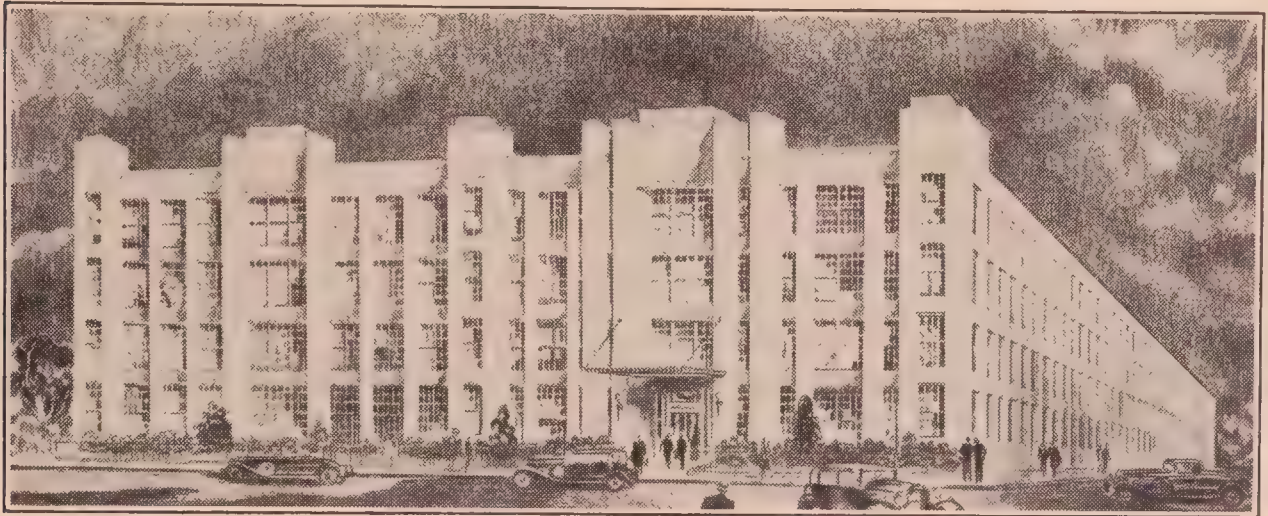
An American, Elias Howe, invented the eye-point needle. Wheeler, Wilson, and Singer developed other fundamental features of the present-day sewing machine and it came into general use about the time the ready-to-wear clothes industry was so rapidly expanding. No doubt it was a great factor in that expansion. Because it was much cheaper than hand work, the sewing machine was used in the men's clothing industry to such an extent that "ready-made" came to mean the same thing to the public as "machine made." But the economies effected by the sewing machine were offset by certain very real drawbacks. Garments made in this way were stiff and wooden looking. They completely lacked softness and grace and style, for even the perfected sewing machine of today cannot begin to duplicate the shaping and forming of the garment under the touch of skilled human fingers. So some manufacturers once more turned to hand work in their shops. To throw out the sewing machine entirely would have made their clothing too costly to sell or at least to sell readily. They substituted hand work in one or more important places and called their product "hand tailored."

As we have referred to the shortcomings of the sewing machine, in all fairness let us recognize its advantages. It is so tremendously quicker than the hand that in many of the operations in making a suit of clothes one machine will equal the output of eight or ten handworkers. Its use enables the public to get a suit of a given quality of cloth at a lower price, or to get a better quality of cloth at the same price as asked for a garment containing more hand work.

Between the custom-made and ready-to-wear clothing came a demand for customized clothing made on a factory basis. After the panic of 1893 came a period of unprecedented commercial expansion. This brought to the clothing business, as well as to many other lines, the opportunity and incentive to "trade up," that is, make better ready-to-wear clothing under better conditions. The period of 1900-10 saw the erection of many magnificent tailoring establishments, in which all the work could be done under one roof and under close supervision according to one

standard of quality. This centralizing of all of the operations in making garments in one building is called the "inside shop."

The result was the establishment of a large number of high-grade establishments, where it was possible to manufacture clothing with a variety of fabrics in numerous sizes and with care in the manufacture to give the effect of custom to ready-made clothing. The



MODERN FACTORY FOR MEN'S CLOTHING

large establishment can buy bolts of cloth selected from 500 to 3000 different patterns each spring and fall. Furthermore, the manufacturer buys nowadays direct from woolen mills which are in competition with others at about two-thirds the price paid by the merchant tailor. Similar savings apply to the purchase of canvas, haircloth, silk sewing thread, etc.

Thousands of garments may be cut over a single pattern developed by the designer of a wholesale establishment, whereas a merchant tailor's cutter must make a different pattern for each customer.

Today tailor-made clothing, according to individual measurement, is usually made in a small shop, while the ready-to-wear clothing, made from a few measurements, is standardized and is made in a factory. Each custom-made suit is different, while in the factory there is standardization for a certain group or class. The same condition applies to high-grade fabrics, where the quantity of each pattern is limited by the trade. Articles of clothing wanted by a few people must be made by small-scale methods and are not suited to factory manufacture.

**Home Dressmaking.** Very few people realize the amount of home dressmaking that is carried on in the United States, particu-

larly in the rural sections. This work is done because the home makers feel it can be done at

Lower cost . . . . .	90.2 per cent
Better materials . . . . .	75.2 per cent
More nearly meet individual needs . . . . .	54.9 per cent
Good ready-to-wear stores inaccessible . . .	7.8 per cent

In order to guide home makers in doing this work retail stores have attempted to assist, but most assistance has been obtained from the purchase of commercial patterns, for it is quite obvious that if the fashions offered these women in the leading paper patterns manufactured today did not closely parallel those featured in ready-to-wear — if the patterns themselves had not been stepped up in efficiency to the point where they made the labor and effort expended in making a garment practically nil — home dressmaking would not occupy the important place that it does.

How strong is the fashion element in commercial patterns? So strong that the pattern manufacturers make seasonal visits to Paris just as the ready-to-wear purveyors do. So strong that they actually buy what to them are the outstanding models and bring them to this country for quick, accurate reproduction in their patterns. These designs are not necessarily exact patterns, seam for seam. Very often it is necessary to simplify the garment a trifle so that the home sewer will have no difficulty in reproducing it. But the reproduction is always true to the spirit of the original — it invariably retains the *chic* that characterizes Parisian creations at their best.

Let us discuss the four reasons given by women for making their clothes at home. The first of these is economy. Economy in home sewing today differs greatly from the economy of many years ago. At that time we had a picture something like this — a woman wanted a new frock. Ready-to-wear at that time not having reached the peak of speed in copying and low cost in manufacturing that it has today, it is quite possible that that woman would have to pay nineteen or twenty dollars for a presentable dress. By buying her pattern and fabric and making that dress, however, she would probably save anywhere from five to ten dollars. The same was true of clothes for her entire family — thus we find Mrs. Blank

sewing for herself and her young sons and daughters as well. The present situation is slightly different. Economy today has a quality aspect. A woman can buy a ready-made dress for any price from five dollars up. This dress may boast the newest ideas in fashion and very appealing lines. Yet, in the lower price levels it is certain to be but one of many hundreds, even thousands, like it. Its material is apt to be shoddy. Seams are sure to give sooner or later. Compare this dress with one made by this woman herself from a modern commercial pattern. In the first place, she has a Paris model — smart, authentic, good looking. In the second place, she is assured of material of good quality even if she pays as little as one dollar a yard. She is permitted to exercise her own imagination and taste in the selection of color, trimming, etc. She knows her finished dress won't be one of thousands like it — and she knows it will fit her perfectly. This dress may cost her exactly what she would have paid for the inferior ready-made model. It may even cost her a few dollars more. Yet the original of her Paris frock probably cost the pattern manufacturer who purchased it in Paris \$200 or \$300. Therefore, this woman is exercising economy in the modern sense.

The second reason — better materials — has been covered under the heading of economy. The fourth — no good ready-to-wear source within reach — can be overlooked; the percentage giving that reason is very small and undoubtedly has decreased greatly in the past five years. But the third — more nearly meet individual needs — is of the utmost importance. Every woman has some figure problem. There are few if any women who can step into a size 14, 16, 36, or 42 dress without need of some alteration or adjustment somewhere. In lower-priced ready-to-wear, good fit for a woman with any figure fault is practically impossible. In ready-to-wear at higher prices, the customer is charged for alterations. By using a commercial pattern with a good alteration chart, the correction can be made in the foundation of the frock — the pattern itself — and the finished garment is sure to fit comfortably and smartly. To the larger woman — the woman who wears a size above 42 — this feature of paper patterns is extremely important. It is almost impossible for this woman to secure correct fit in a ready-made garment except at prohibitive cost; yet by making

her own clothes or having her dressmaker make them from standard makes of paper patterns, she can be sure of achieving the fit she needs and desires at a nominal price.

There is probably no other field save the purely mechanical in which improvements have been so consistent and so important as in the field of commercial patterns. The aim and ambition of the pattern manufacturers has been primarily to make it simple in the *n*th degree for a woman to make her own clothes — and to make them smartly. Thus we have seen the introduction of the new cutting ideas into the pattern field, such as a printed cutting line. Separate construction sheets have been simplified again and again, and re-illustrated until it is now possible for a woman to follow every detail in a garment's construction in graphic picture form. Cutting layouts for each individual size are another prominent feature of modern commercial patterns; not only do they insure greater perfection of result, but they also save the pattern user the cost of wasted material.

This is truly an age of economy. Yet good taste, individuality, and fashion have their place in the modern scheme of things as well. And the commercial pattern with its present-day perfection of mechanical details and its close affiliation with the center of fashion is undoubtedly one of the first and most important sources of supply for smart clothes at modest prices, particularly for people of limited income and much leisure time, such as are found in small communities.

**Handicraft vs. Factory System.** A comparison between the productiveness of a worker under the handicraft system compared with the factory system may be of interest.

1. Two weavers were required for each wide hand-loom, but with the invention of the fly shuttle one weaver was able to manipulate the loom. The production of the loom increased 100 per cent.

2. Power spinning machines enable one man to produce as much yarn as 250 to 300 hand-spinners could produce.

3. A hand-loom weaver would weave 8 yards of carpet, while a power-loom weaver on a single loom could produce 40 yards.

4. With automatic stop-motion looms one weaver can operate as many as 85 looms at once, assisted by a bobbin boy.

5. Power printing machinery of textiles with one operator can produce as much as 100 men and 100 boys on block prints.

6. With 1,500,000 people in spinning mills, the production would equal that of 40,000,000 on one-thread spinning wheels.

7. The rate of hand-sewing was between 30 and 40 stitches per minute per operator. The foot-power machine operated by a single person makes 900 stitches per minute, or the equivalent of 30 people working on hand stitches. Power sewing machines operated by a single person make 4000 stitches per minute or the equivalent of 133 people hand-sewing at once.

Under the old-fashioned handicraft system the small shop, composed of the owner, a number of workers, and a few apprentices, was the organization. Hence, neighbors and owners and workers were closely related, and the owners felt that the great prize in life was achievement (good workmanship), good name, and the respect of workers and the community. Profits were small.

During the handicraft period population was fairly constant, was fairly evenly distributed and slowly increasing in numbers with industrial labor in close contact with the soil. This gave a self-sustaining and well-balanced relation between the necessities of labor and earning power, so that prices, wages, rents, and employment were fairly constant.

Under the factory system the relations between employer and employee are distant. Owners frequently live at a distance, and the workers have little chance to voice their sentiments in the organization. Profits are frequently the chief incentive under the factory system. Each invention of machine or process causes a disturbance by enlargement of plant and replacement of workers — causing more or less unemployment, poverty, and much unrest among the people by upsetting the economic balance, the number of workers, and the work to be done.

**Effects of Specialization.** Specialization has certain advantages and certain disadvantages. The advantages may be summarized as follows: (a) greater skill, due to repeated operations; (b) work so arranged that each operation follows in order from one end of the factory to the other, thus saving time, and permitting each operation to be thoroughly learned; (c) the operations may be classified according to skill and technical intelligence required, so

that all types of mentality and skill may be employed; (d) as the highly specialized operator, the worker concentrates on his work to such a point as to conceive devices and improvements that naturally lead to new inventions; (e) each machine and worker under normal conditions is kept busy all the time under highly specialized skill, so that there is no waste of equipment, production, etc.; (f) highly specialized work is monotonous, but may be adapted to people of limited skill and intelligence and requires little if any thinking.

The disadvantages are as follows: (a) utilization of women and children in the simpler operations — spinning, weaving, etc. — at low wages and long hours; (b) each worker under this system depends upon the assistance of every other worker — spinners on carders, and the weavers on the spinners — thus if one group is not employed, the others must also be laid off; (c) due to frequent changes of processes and the invention of new machinery, much of which may be automatic, frequently groups are victims of technological unemployment.

**Effects of Mass Production.** With such large-scale methods of production have come certain changes, such as the following:

(a) Tendency to standardization with regard to pattern, style, and size, not allowing as much individual freedom of selection of style as in foreign countries. Personal wishes are gratified to the highest degree by distinct individual styles.

(b) The production per worker is very great, and while the work has a tendency to make the workers part of the machines and to allow for very little individuality in design or craftsmanship, nevertheless it does give a shorter day, more leisure, and a chance to enjoy the higher intellectual studies and the freedom of the open air.

(c) It develops a splendid spirit of coöperation among all. Those of a distinct individual type are eliminated in the struggle for leadership under the plan of industrial organization.

(d) The development of industry on a large scale has separated the business man and the worker so that their spirit of direct contact is gone. It also makes the business man and others called capitalists very much richer and absorbed in the materialistic development of industry, often at the expense of the workers.

There is thus created a wide gap between them so that all differences are highly magnified as questions between capital and labor.

**Small Industries.** In the development of industries during the last generation or two there has been a movement toward large units of manufacturing operation, in some cases employing 5000 people in one plant. The Wood Worsted Mill is the largest worsted mill in the world, and has 3,080,180 square feet of floor space and



LARGEST WORSTED MILL IN THE WORLD

Wood Worsted Mill, Lawrence, Mass. Note the length, the structure (called mill construction), and the good lighting.

employs over 5400 people. There are similar large mills for cotton. Such a plant may be very efficient in prosperous times, when orders are received in large numbers. But at times of depression or panic, when only small orders are given to meet actual needs from day to day, such a plant becomes inefficient because the overhead is so great that only large orders can be economically filled.

The importance of the smaller unit in the industrial scheme of things is emphatically driven home when one contemplates the fact that among the thousands of manufacturing establishments in all parts of the United States approximately only 3 per cent employ more than 250 wage earners and only 1.4 per cent employ more than 500. It is even more interesting to note that plants having working forces of 500 or less employ 62 per cent of our industrial wage earners. From these statistics it is apparent that the policies

and problems of these companies are necessarily an important factor in American industrial development. Nor can any plan for social or economic betterment be considered which does not include consideration of the problems of both employer and employee in this important group.

The policies of these smaller plants, especially in matters that affect social welfare, are becoming the subject of general attention and interest. Particularly during the recent business depression, it has been shown that no matter how well certain larger organizations may provide for the common hazards of employment, in so far as their own employees are concerned, a general acceptance by smaller establishments of similar responsibilities is necessary for effective results. That such action by smaller plants is often more difficult because of limitations of size and resources is conceded, but many small plants have worked out solutions of these and other administrative problems.

During the depression of 1930-1932, a movement has taken place in favor of the smaller units of industry, and they have been organized to become very efficient. They are efficient, not only financially but also from a social point of view, because they can exist in smaller communities. Large communities are not economical because their size involves such costs as subways, motor systems, etc. which are noticed in the tax rate. The cost of living in a smaller community is cheaper and allows better facilities for family life — a separate house, garden, etc.

**Workers.** The success of every business organization depends upon a spirit of coöperation and loyalty upon the part of the workers — often called *esprit de corps*. A working force having as its background varied racial traditions, wide variations in age, earning capacity, length of service, education, training and skill, and many differences in point of view and reaction to conditions must be molded into a homogeneous unit and coördinated to fulfill the purposes of the management. This function and this responsibility have been delegated to the Industrial Relations Division of many factories and textile industries. Such a department has the following organization in one of the largest and most efficient mills in the United States, Cheney Brothers, South Manchester, Conn.

Subject to the final authority of the President and the Board of Directors of the company, the Industrial Relations Division is directed by a manager and an assistant manager. At the present time, the manager in charge is a member of the Cheney family, and thus serves as a very direct link between management and industrial relations activities. The actual work of the division is conducted through seven departments: Placement, Employment and Training Department, Employee Aid and Insurance Department, Medical Department, Education Department, Plant Safety and Sanitation Department, Housing Department, and Service Aides Department. The last department is in reality a personnel liaison service.

### *Responsibility and General Functions*

Subordinate executives in the Industrial Relations Division, directing the various activities, include supervisors of employment and of employee training, a medical supervisor, a supervisor of insurance and the mutual benefit association, a supervisor of the housing department, and three departmental service aides. Although in the subsequent discussion, the specific activities of the Industrial Relations Division have been arbitrarily assigned to the various departments, it is well to point out that they are really the functions of the Industrial Relations Division as a whole and are under the general control of the manager and assistant manager of the Division.

The Industrial Relations Division has no fixed policy, in the sense of an established procedure to which it must adhere. The program in effect at any time is the one calculated best to accomplish the results desired. If any feature of this program fails to justify its continuance, it is dropped and new activities may be introduced as the need for them is demonstrated. The Division operates through four well-defined channels, which designate its authority and limitation of authority. These channels are: as representative of the President; as representative of the Company and auxiliary companies; through recommendatory coöperation; and in direct control of industrial relations activities.

*Representative of the President.* The industrial relations manager is charged with the preparation of material to be presented to the works council and the foremen's conferences, and in doing so assists the individual selected to present this material. Also, in his capacity as a representative of the President, the industrial relations manager may be represented at any departmental works council meeting and at any foremen's meeting. Such representative may take part in the discussion and may suggest and advise with the works manager or superintendent in charge, in any way that does not conflict with the authority of the person conducting the meeting.

*Representative of the Company.* The industrial relations manager also acts as representative of the Company with outside authorities, where there is a community of interest in the conduct of schools, recreation centers, hospitals, health, sewer and sanitary control, town charities, town police, public utilities, and manufacturing and employees' associations. It is also the duty of the manager of the Division to keep in touch with recently enacted or pending legislation which relates to matters under his supervision.

*Recommendatory Coöperation.* Thirdly, the industrial relations manager acts as adviser and, if necessary, as mediator when such matters as compensation or discipline are at issue between employees and the production control. He takes an active part in the establishment of general wage scales, supplementary forms of compensation, and all rules governing discipline and relating to working conditions. He may make recommendations for the employment of certain individuals, including the temporary assignment of injured employees, and for transfers, promotions, layoffs, and eliminations. He has the power to make final recommendation for pensions or part pensions

to the Board of Directors, the right to advise with superintendents and foremen as to grievances of individuals, and the power to make such investigations as appear necessary.

*Direct Control of Activities.* The administration of specific activities in the industrial relations program is the fourth and most conspicuous function of the Industrial Relations Division. The effectiveness of the program is in large part dependent upon the successful functioning of these activities. The manager and assistant manager of the Division supervise all activities, but administration of particular activities is usually assigned to one department.

### *Departmental Organization*

The many activities that come within the scope of the Division's operations may be grouped somewhat definitely under the various departments. The accompanying chart shows the general organization under these departments.

*Employment, Placement, and Training.* Through the employment bureau applicants for employment are interviewed and tested, and recommendations for employment are made to the various operating divisions and departments. General methods and principles of selection are adopted subject to the approval of the manager of the Division. Training of all "learners" is supervised during the period of adjustment. This is done in separate training sections when practicable, otherwise under the foremen and superintendents.

*Medical.* Through the medical department the Division supervises all plant medical work, including outside nursing, physical examinations for employment, and optical, dental, x-ray, physiotherapy, and laboratory work.

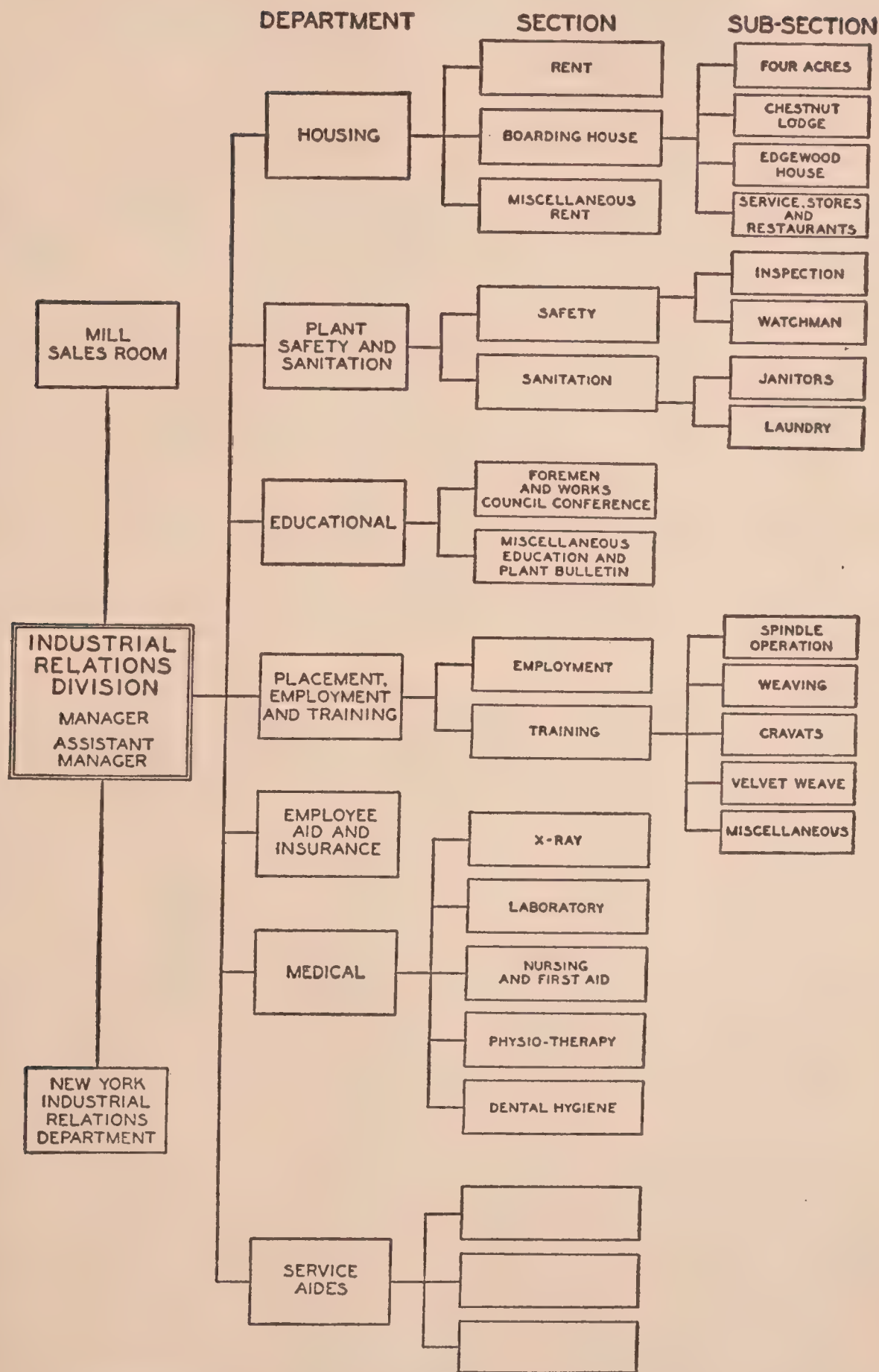
*Employment Procedure.* All applicants for positions with the company must pass through the employment department, regardless of who may first have suggested them for employment. While the recommendation of individuals for employment by present employees, including managers, superintendents, and foremen, is welcomed, this does not alter the essential routine. Following a satisfactory interview and physical examination, and in certain cases an intelligence test, the applicant is sent to the department superintendent. If acceptable to the superintendent, he is referred to the foreman, who has the right of final decision as to acceptance or rejection.

Individual merit is the leading consideration upon which employment is based. Other considerations which are taken into account and which may be determining factors in cases of nearly equal merit are, in the order of importance attached to them: present employment in good standing in another department of the company; former employment with the company, with a good record; completion of the coöperators' textile course and all-day textile course at a trade school; and residence in the town of Manchester.

Intelligence tests are prescribed for all applicants for office positions and may be required in other instances where they are considered applicable. These tests are used to provide supplementary information as to an applicant's special aptitudes or weaknesses rather than as a basis upon which to accept or reject the applicant.

*Employment of Minors.* No child under sixteen years of age is employed unless such employment is in connection with a student course in textiles in coöperation with the State Trade School, or is under the supervision of the training section of the Industrial Relations Division. All applicants under sixteen years of age must comply with the Connecticut State law and can not be employed more than eight hours in one day. This, of course, does not apply to students taking the supervised textile course.

*Employment of Married Women.* The policy of the company does not favor the employment of married women, particularly those with minor dependents. Single women are at all times preferred, although married women without children may be accepted for permanent employment if they have passed a



ORGANIZATION OF THE INDUSTRIAL RELATIONS DIVISION

satisfactory physical examination. Even if their physical rating is below the standard required for permanent employment, they may be given temporary assignment. Married women and widows with children under eight years of age are subject, prior to employment, to special investigation to establish the fact that the children will be properly cared for during working hours and that such arrangement will be fairly permanent. Even when the report of such investigation is satisfactory, employment is granted only to those who previously have had at least six months' experience at the Cheney plant in the work applied for, and who can pass a satisfactory physical examination. Those women who have acquired skill in certain operations are considered desirable employees by most of the foremen in charge of actual productive work, although young women are preferred for new training.

*Restricted Employment.* Applicants who are ineligible for regular employment but who desire restricted employment are placed only in such jobs as are approved by the medical department, subject to the further approval of the superintendent of the department to which the employee is assigned. This superintendent has previously received a copy of the record of the applicant, together with a statement of the nature of the restriction. A quarterly inspection of these employees working under restrictions is made by the employment department. Any violation of the conditions under which such employee was engaged is reported to the department superintendent, who must advise the employment department within two weeks as to the disposition made of the case. All waiver cases, in which the company is released from responsibility for certain possible contingencies, are required to have waiver papers properly signed and witnessed by an agent of the State Compensation Commission before employment.

*Transfers.* Transfers, of whatever nature, must be effected through the employment department and are subject to the approval of the medical department. Such requests for transfer as come from the employee are made first to the proper foreman and then to the employment department. The application is then submitted for approval to the superintendent of the department in which the employee works. Upon notification of such approval, the employment department places the application in a preferred classification to await transfer.

Superintendents and foremen are expressly forbidden to approach employees of other departments with regard to transfer unless the employment department has referred the employee to them. When the superintendent of a department finds a reduction in his working force necessary, he notifies the employment department of the employees available for transfer. If transfers are not effected within a reasonable time, employees are laid off and referred to the employment department. To prevent subsequent unpleasantness, special wage increase or promotion can not be granted to a temporarily transferred employee without the approval of the superintendent of the department in which the employee is regularly employed.

Superintendents take up with the employment department, in writing, cases of employees who are no longer able, because of physical incapacitation, old age, or for other reasons, adequately to perform the tasks to which they are assigned, and for whom other and less exacting jobs should be found.

When a superintendent considers that an employee is disqualified for further employment in his department, he may either discharge him from the department or communicate with the employment department relative to his transfer. All cases of departmental discharge are reported to the manager of the Industrial Relations Division. Employees may be finally discharged from the company only through action of the employment department.

When curtailment necessitates a reduction in the force, the basis of retention of employees is mainly their value to the company. This is determined on the basis of the employee's credit rating, which includes years of service,

regularity of attendance, productivity, quality of product, and citizenship. In the case of individuals whose other qualifications are substantially similar, the company retains those who are under the necessity of supporting themselves, in preference to those who have other means of support, and unmarried women.

### *Training*

The employment department at Cheney Brothers retains supervision over the new employee until he or she is able to enter the ranks of fully-qualified employees. The training sections are, therefore, under the control of this department, subject to the supervision of the manager and assistant manager of the Industrial Relations Division.

*Training Units.* Training units are maintained for instruction in spindle operations, broad goods weaving, velvet warping, velvet twisting, velvet weaving, and cravat making operations. Instruction in spinning includes transferring, winding, doubling, first and second spinning, reeling, tubing, and quilting. Parts of two departments are concerned with training in broad goods weaving, and twenty-four looms in each department have been set aside for instruction purposes. Velvet twisting is first taught upon specially constructed frames; and later the learner is given more advanced training and experience on production jobs. A special demand for velvet weavers has resulted in the assignment of twenty-six looms, one head instructor, four weaving instructors, and one loom-fixing instructor to this section. Instruction in cravat making is carried on in conjunction with production work, and includes training in threading needles, pinning, folding, slipstitching, hemming, pressing, and inspection.

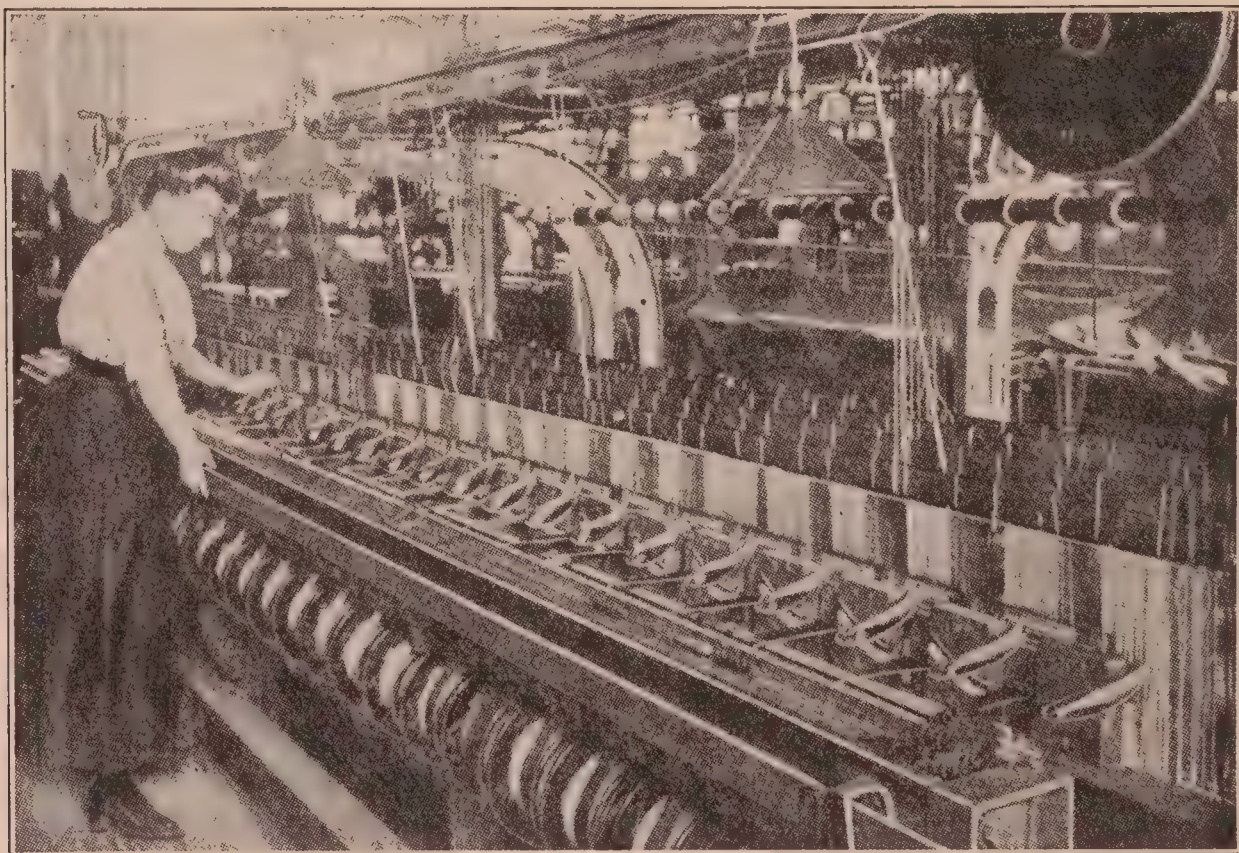
Occasionally graduates of colleges or higher textile schools are given an intensive course of training in all mill operations. A special program is laid out for these students in order to expedite the completion of their training, and while no special instructors are assigned to this work, the progress of these students is closely followed by the head of the training department.

*Coöperative Students.* The Cheney Brothers' plant has maintained close touch with the coöperative high school and trade school course conducted in South Manchester, where many of their employees receive both academic and trade instruction. Students are given practical experience in the various production departments of the mill one-half day each week during the school year and full time during the summer. These students are paid by the company while in school at the rate of twenty cents an hour during the first two years, twenty-five cents an hour for the third year, and thirty cents during the fourth and final year. A bonus of five cents per hour is paid to those who attain a grade of 85 per cent or over. Upon graduation these students are taken into the mill to receive a further course of training in various mill operations for an additional three years.

The philosophy that underlies and has created the industrial relations program has had an important bearing upon its development. It is a philosophy which recognizes the indispensability of capital, management, and labor for the joint operation of productive facilities, although the first two elements are synonymous in this enterprise, but draws sharp distinctions between the responsibilities and the return due to the two parties. Management will manage without interference; it will determine policy and administer it; it will, upon the same premise, receive the profits and suffer the losses. The working force is in the plant to operate the facilities for production. The worker is entitled to safe and sanitary working conditions, a fair wage, and just treatment. Anything in excess of this legal and social obligation lies within the discretion of the management to give or to withhold. The fact that in actual practice the Cheney management has given much and made generous

provision for the welfare, economic and otherwise, of its working force does not alter the cardinal principle that it has been the pleasure, not the obligation, of the management to do this.

This attitude of the management is well exemplified in the form of employee representation at the Cheney plant. The works council is intended to serve as an educational agency to inform representatives, and through them the entire working force, about the general problems management is facing, and also to give collateral information with regard to the various branches of the company's operations. Minor misunderstandings and difficulties are taken



RIBBON LOOM WEAVING NECKTIES

Cheney Brothers' Factory

up and settled. Recommendations to the management are encouraged. Recommendations upon important questions of plant policy are only advisory in nature, but this does not appear to lessen the interest of employees in council activities.

There is no misconception on the part of the management that the plans and activities of the Industrial Relations Division are of themselves sufficient to maintain satisfactory relations with employees. It is well understood by the management and in a large degree by workers that such plans are but the mechanics aiding in the interpretation of the "Cheney spirit" which underlies and permeates the personnel relations. Thus an attempt at evaluation of the industrial relations program upon the sole basis of its value in dollars and cents would serve little in determining its true worth. The returns in employee coöperation, loyalty, and morale are rated high at Cheney Brothers but are not easily measurable.

**Wages.** Good wages supply one of the most important factors in determining the success of a mill or factory. Most disagreements arise concerning the matter of wages.

Wages and hours of work of one of the best mills during a hundred years are as follows: The weekly hours of work ranged from 72 to 60. A 48-hour week with overtime was introduced about August, 1927. Members of the mill owner's family, working 72 hours per week in 1843, received from \$28 to \$48 for three months' work, and were paid quarterly. These earnings are now exceeded by many employees of a single week's work of 48 hours.

Since 1843, average earnings of employees have increased sixteen fold, or from four cents to sixty-four cents per hour. The trend of wages has followed substantially the general course of wages during this period. This trend has been gradually but steadily upward, interrupted at times by abnormal increases, which were followed by recessions. Thus, between 1870 and 1880 an 11 per cent wage reduction was put into effect; in 1921 there was a 14 per cent reduction, and another reduction of 10 per cent in 1926. With the exception of the last, these reductions were subsequently more than regained.

In 1926, average weekly earnings varied from \$28 to \$32 for all men employees, and from \$18 to \$24 for all women employees, the earnings at any particular time depending upon the proportion of full-time operation. Earnings are, of course, determined by length of time worked as well as by rate of pay.

It was found that earnings of men employees reach a maximum at thirty years of age and hold this peak until the age of forty-five is reached. A slight decline in wages begins at the age of fifty, which is accelerated between the ages of fifty and sixty, and becomes very marked after an employee reaches the age of sixty.

**Labor Turnover.** It is a well-known fact that in all factories and mills there are too many workers discharged and others engaged in their places during a year. The percentage of those engaged per year in comparison to the total working force is called labor turnover.

The records for several years of turnover reveal the fact that the excess of turnover for women employees over that for men amounts to from 50 per cent to 100 per cent per year. By nationalities, turnover is greatest among Italians, with little difference between the sexes. A very low proportion of this total working force is removed by discharge — not over 0.089 per cent

in the period 1922–1926, inclusive. The stability of married men employees exceeds that of single men and of both married and single women, as might be expected. As compared with married men, the turnover of single women is greater by 62 per cent, that of single men by 133 per cent, and that of married women by 255 per cent.

**Injury of Workers.** Industry can also be made more efficient by preventing the maiming and destroying of human life. The most precious asset in industry is human labor. Every effort should be made to conserve physical and mental well-being by good working conditions, so that the worker's period of usefulness and happiness to his family may be as long as possible. Accidents and their prevention are causing grave concern in American industries today, and unprecedented efforts are being made to prevent them.

According to a United States Government report made a few years ago of the 4,000,000 persons employed throughout the United States, some 2,500,000 meet every year with more or less serious injuries. As a result of these accidents, a total of 227,000,000 working days were lost in a year. If the average pay of \$4.50 a day be multiplied by this total, it will be seen that the loss in one year to wage-earners alone totals over \$1,000,000,000. In other words, the lost time caused by accidents in a year is equivalent to the amount of time lost by over 750,000 men out of employment an entire year.

To reduce the loss caused by accidents, many great industrial plants have organized elaborate campaigns of education and devised highly ingenious systems for safeguarding their employees.

**Recent Changes in Mill Design.** While the original mill building was a simple wooden structure built on the side of a stream, modern mill buildings and wearing apparel factories have developed into specialized structures adapted to their industrial requirements and to the welfare of the employees. The following changes have taken place in mill construction and equipment during the past generation.

The design of textile plants has followed the development of power and transportation facilities, and has been greatly influenced by changing conditions in prices of raw material and labor. In the early days of the industry, when the serious question was to obtain power to drive the plants, and when labor was both cheap and

abundant, practically all of the mills were located on the streams where water power could be secured for direct mechanical transmission. In this stage of the art, a building with masonry walls and timber-joisted floors was the almost universal type.

The improvement of the Corliss engine and the development of transportation changed the industry from one using practically all water-power plants; and for a number of years, beginning with the early 'eighties, a large number of the new plants were driven by steam. The increasing use of steam also tended to distribute the textile industry over a wider territory. With the introduction of the slow-burning type of construction, which consisted of masonry walls, generally brick, and heavy timbers carrying heavy plant floors, there came a standardized type of building that remained unchanged for many years.

With the last decade the constantly increasing price of brick and timber, together with the growing scarcity of the latter, has forced the industry to look for other materials, and within the last few years there has been a large increase in the amount of reënforced concrete used for mill buildings.

When labor and machinery could both be obtained at very low prices, there was no urgent economic necessity for securing high production per unit, either of labor or spindle, but with the rapid increase in prices during the last few years the situation has radically changed, and every manufacturer now bends his energies toward securing the highest efficiency from his plant, as well as toward reducing its depreciation by removing preventable causes of rapid wear, such as excess vibration and friction due to improper alignment.

In today's market for labor and materials, the reënforced concrete buildings cost practically no more than the ordinary type of slow-burning construction, with the advantage wholly in favor of the concrete, both in the matter of light and stability. More recent designs are of the flat slab type, which gives a room without beams and with about half the usual number of columns. This type of building, if used with steel sash and doors, is almost ideal for cotton manufacturing, in that it gives an unyielding floor for machinery, with an abundance of light. It can be built quickly, and in a great majority of cases the bulk of the material is available

near the site, especially the heavy materials such as stone and sand.

Too much importance can hardly be laid on the necessity of a firm and unyielding floor for textile machinery. Every manufacturer knows how impossible it is to keep machines in line on a regular timber floor, and even if frequent leveling is done, it is always at the expense of the life of the machine, for every time the alignment is changed the bearings are worn in a new spot. Recent tests have shown that with the reënforced concrete floors there is practically no need for realignment during the life of a machine, provided it is properly set in the beginning. This one feature, in addition to the greater steadiness, would make the reënforced concrete type of building worth while, even with a large difference in cost.

A large percentage of the machines in existing mills are (and most of those built in the future will be) driven almost entirely by individual motors, which make it easy to change the location of machinery at any time. The use of individual drive on textile machinery is no longer an experiment, but it still has some opponents, especially among those who have not used it. It is very doubtful if any manufacturer who has ever had his mill properly and thoroughly equipped with individual motors could ever be induced to depart from that arrangement, and the number of those who strongly favor it is rapidly increasing. No form of belt transmission yet devised will give constant and uniform speed, even if it receives a great deal of attention, which is rarely the case in a textile plant of any size. It is not infrequent to find mechanically driven spinning rooms where the average speed is 10 per cent below the figured speed. This, of course, means an equivalent loss of production, as well as uneven running work, since any class of textile machine will give better results if run at constant speed. This is especially true of looms, since no loom will function properly with varying speed.

The development and improvement of the silent chain has made it possible to apply the individual motor to nearly every type of cotton mill machinery, and where the application is properly made the resulting increase in production will always prove profitable.

In the handling of cotton through a mill there has been a constant need felt for some form of conveying apparatus that would

reduce the cost of transportation, and many schemes of this character have been tried and most of them found wanting.

A great deal of improvement has been made in the handling of raw cotton from the warehouse to the picker room by using outside opening rooms of capacity sufficient to open and thoroughly age the cotton before it is taken into the mill. Some of the more recently built opening rooms have bins sufficient to hold several days' storage of cotton. After being allowed to age, the cotton is taken into the mill through a conveyor pipe and distributed to the hoppers of the breakers or openers by means of automatic distributors.

From this point, many forms of lap conveyors have been tried but few have been successful, partly because the distribution was to a large number of machines and not to one common point, and partly because the laps were frequently damaged. In designing and conveying system in a mill, it must be borne in mind that, unlike in many other forms of distribution, there is no single point of origin or of destination, and without an extremely complicated system the chances are that the total amount of handling will be fully as great with the system as it would be without it.

Often the necessity for any handling system can be done away with by arranging the machinery in such a way that the length of the haul is reduced to a minimum. This, of course, is a matter in which no general rule can be laid down, and each case must be settled for itself, but frequently an intricate system makes an appeal to the manufacturer just because of its complication, when a careful analysis would show that the amount of labor saved would not warrant the expense involved.

One of the most valuable improvements in mill equipment during recent years has been the use of automatic regulation in connection with humidifying apparatus. Formerly, very little attention was paid to the necessity of having an absolute uniform moisture at all times, and, of course, without automatic regulation this is not possible. But since the regulators have now been developed to a high point of efficiency, there is practically no excuse for a modern mill not to be properly equipped. This installation can be made in any mill, whether new or old.

There are a number of cases on record where mills have reduced the weight of their picker laps by 5 per cent and still maintained the

correct weight of their output. This does not mean that they have added to the normal moisture in the cotton as it came from the warehouse, but that they have reduced the loss of this moisture from evaporation and have maintained in the cloth room approximately the natural moisture that was in the cotton when it came from the bale. This not only saves a big loss in weight, but also makes better running work, which in these days of high-priced labor is of tremendous consequence.

A properly designed mill, with abundant light, firm foundation for machinery, and the proper drive to insure uniform speeds, will secure an increased production without the use of additional labor, and is unquestionably worth a great deal more money than a mill of the usual type. In the long run it will prove to be a very much better investment even at its increased cost.

**American Methods of Manufacture.** Specialization in the processes of production is distinctly American and has brought many blessings to the country. It has also brought about many social and economic conditions that have threatened the prosperity of the country. These problems will be gradually solved, but they must be solved not only according to economic principles but also for the best interest of society. Some results of this specialization are as follows:

1. The production of goods has been increased in some cases far beyond consumption, as in the case of cotton fabrics in the period 1930–1932.

2. The cost of production per unit is lower, thus allowing more people to use a variety of goods.

3. There has developed a greater variety of commodity, such as a variety of cotton fabrics to meet our wishes. But an abundance of styles may mean overproduction of certain kinds, which means that they may have to be sold below cost.

4. Commodities are produced in a continuous stream, so that there is an ample supply. But in a depression, the plant-capital goods may not be utilized to full capacity and hence will not create the maximum wealth.

The development of large-scale production has also brought problems of (a) unemployment due to the rapid development of automatic machinery, (b) constant friction between the business

man and labor over working conditions and wages, (c) overproduction, (d) uneven distribution of business prosperity, resulting in cycles of prosperity and depression.

**Comparison of Foreign and Domestic Organization.** Textile mills or factories in Europe are not organized on such a large scale. Each subdivision, such as spinning, weaving, or finishing, constitutes a separate mill. There are certain advantages and disadvantages in both American and European organization. For example, while the cost of production in a large American mill is small, its productive capacity is so great that it must have large orders, such as 50,000 or 100,000 yards, etc. There are times when hand-to-mouth buying prevails, which means that small orders are frequently given every month. A small mill can execute small orders more economically than can a large mill. On the other hand, the cost of production is usually greater in a small mill than in a large one.

We must bear in mind that production or manufacture on a large scale means standardization, or a uniform product. Most textiles and clothing in this country can be standardized and made on a factory basis. In Europe, there is a tendency for each country to have its own standards, and without a wide market it is not possible to standardize to the same extent as in this country. Even in America there are certain qualities of high-grade fabrics and costumes that must be manufactured on a small scale.

However, there are also certain advantages in the smaller unit organization that exists in foreign countries: (a) they can secure small orders to advantage during the hand-to-mouth buying; (b) small units retain a close relation between employees and employers and pleasant relations between buyer and seller; and (c) a number of small units may successfully combine the advantages of the large unit.

**German Shoe Manufacturing.** The German shoe manufacturers say that they can not follow the American practice of manufacturing only one shoe product. They are obliged to collect their trade from almost every country except America. It comes in small orders, and they have to accommodate themselves to many whims and make patterns and styles for every district of Europe. This increases not only the cost of production but, perhaps to a

greater extent, that of marketing. In the German shoe shops, moreover, the old conditions of apprenticeship still hold, hampering the change from hand to machine processes and preventing a large output.

The average American thinks that the success of German industry is due to low wages and long hours of work. This is not true, for if labor is cheaper there, coal is dear, machinery is dearer, and imported raw material pays a tax. The industrial supremacy of Germany is the result of definite and deliberate political action. Thirty years ago the German statesmen realized that the nation was inferior to America and England in natural resources and natural ingenuity; this inferiority forced upon their attention the value of thrift and of education. Thrift produced capital, and education produced industrial efficiency.

America and England have served Germany as models of shop organization and equipment. They have imported American and English machines and tools; they have engaged the best men from the best shops of these two countries, and have copied their methods of work and organization. Besides this they have devoted special attention to a matter that America has ignored to a great extent — the scientific or technical education of their people.

**Liberty in Business.** At the beginning of our modern industrial system, about the time of the French Revolution, a spirit of democracy and liberty existed in almost every realm of activity. It was natural that business enterprise should be imbued with the same feeling, and that individuals should be permitted to produce and consume at will, without restriction from government. The argument for free trade was based upon the theory that all trades and occupations should be opened wide to all the people of a nation, in order that each one might choose the vocation for which he is best adapted. This principle of free enterprise naturally produced competition among business men, and was felt to be one of the surest methods of protecting the interests of the consumer and the general welfare of society.

The relation of the government to business and industry has been a long-debated question, out of which have developed two distinct policies: (a) mercantilism or paternalism and (b) *laissez-faire*.

The history of industry shows that the government has always had more or less influence on it. The guilds of the different cities were practically the government and regulated the quality and prices of goods. The mercantile system justifies the influence of the government in industry so as to increase the commercial and military power of a country. Hence after the disappearance of the guilds we find the government exercising considerable control of industry.

The other policy was founded on the principle of democracy and liberty. Under a policy of *laissez-faire* the government will keep its hands off and rely on competition to regulate all problems of business and industry.

Competition benefits society in general as follows: (a) by reduction of prices; (b) through the struggle to obtain the most customers it causes competitors to render the best service; (c) the elimination of waste in production in order to give larger profits provides a higher standard of efficiency; (d) in order to attract the most customers the tendency is to improve products; and (e) competition under vigorous leadership develops new undertakings and inventions.

On the other hand, the struggle of competition sometimes causes: (a) attempts to adulterate or substitute inferior goods; (b) production of more goods than society can use; (c) employees are obliged to work for long hours at low wages, and in unsanitary places in order to make the cost of production low; (d) employment of children and women with low wages and long hours; (e) unfair practices in order to secure advantage; (f) the use of competitive advertising, thus increasing the cost of the goods and not benefiting society in general.

For the past fifty or one hundred years the effort of industry has been to maintain a supply that would be adequate to meet the demand. With the development of science and the advance of knowledge production has outstripped consumption, and the world is today facing for perhaps the first time a condition of overproduction. Under the earlier conditions the necessary policy of government was to protect the consumer against exploitation through monopoly, unreasonable restraints of competition, and price condition made possible by the shortage of production.

Statutes such as anti-trust laws prevent producers and manufacturers from protecting themselves against the evil effects of overproduction. As the result of overproduction of the factory system there has been a depression about once in ten years during the last fifty years. Business men during each depression have realized the evils of overproduction and have repeatedly asked the government to grant business the privilege of regulating itself by controlling production and eliminating poor business practices, price cutting, etc. But after the depression the enthusiasm for better business stability disappears, and there is no definite demand for modifying existing laws with regard to trade practices, price regulation, etc.

The depression of 1930-1933 brought much unemployment, poverty, and distress, particularly in the large manufacturing, industrial, and agricultural districts.

These hardships may be explained by the fact that people living under primitive or old-fashioned conditions work harder and naturally have a lower standard of living than the industrial workers. Then again the thrift that they are obliged to practice has developed economies and methods of securing the necessities of life that the industrial worker feels are beneath him.

The factory system has provided us with machines that multiply our power many times and produce more with less work and less cost than ever before. Nevertheless, with all our facilities and excess of every kind we have depression and people starving while there is a surplus of food, clothing, etc.

The reason for this condition is due to the fact that the masses of workers have not been able to buy the clothing, etc. that they have produced. They could not pay the price. Industry has not been able to furnish clothing and other commodities at a price that the masses can pay. The result is that goods have accumulated, due to overproduction, and factories and industries have been obliged to close down. The working group are necessarily employed on part time or no time, earning less wages. The buying power of any country or community comes chiefly from the wages of the working classes. Hence, in order to bring commodities within the reach of all it is necessary to reduce the price through elimination of waste or to increase wages and shorten the

work week so the work may be spread over the greatest number of men.

In the summer of 1933 Congress gave the President unlimited powers to deal with the problems of the depression. The President proposed a National Recovery Act, which was a nation-wide plan to (a) raise wages, (b) create employment, (c) increase the purchasing power of the wage-earners, and (d) restore business activity. The President asked employers and the public to enter into an agreement. Each employer signed the following certificate of compliance with the National Recovery Act, and gave it to the local postmaster, who gave to the employer a "blue eagle" poster to place in his establishment to notify the public that he had agreed to the terms of the Recovery Act. He could then put the "blue eagle" on the merchandise that he produced.

The agreement or code contained the following specifications:

#### *Hours of Work*

- A. Workers in factories or mechanical workers or artisans.
  - 1. Thirty-five hours a week until Dec. 31, 1933.
  - 2. May be employed 40 hours a week for not more than six weeks between Aug. 31, 1933 and Dec. 31, 1933.
  - 3. Not more than eight hours in any one day.
  - 4. Agreement does not apply to those employed on:
    - a. Emergency, maintenance or repair work.
    - b. Highly skilled workers on continuous processes would reduce production.
  - 5. Does not apply to employees in managerial or authoritative capacity receiving more than \$35 a week.
- B. Clerical and Service Employees:
  - 1. Forty hours a week until Dec. 31, 1933.
  - 2. Not more than eight hours per day.
  - 3. Employers not to reduce hours store or service is open for business below 52 hours per week unless:
    - a. Hours were less than 52 on July 1, 1933.
    - b. If so, no further reduction permitted.
  - 4. Hour limitations do not apply to:
    - a. Establishments employing not more than two persons in a town of less than 2500 population, unless town is part of a larger trading area.
    - b. Outside salesmen.
    - c. Registered pharmacists and other professional persons.
    - d. Employees in a managerial or authoritative capacity receiving more than \$35 a week.

#### *Concerning Wages*

- A. Workers in factory or mechanical workers or artisans.
  - 1. Minimum of 40 cents an hour unless rate was less than 40 cents an hour previous to July 15, 1929.
  - 2. No one to receive less than 30 cents an hour under any condition.
  - 3. Above rates apply whether worker is on a time rate or piece rate.

*Accounting Employees*

B. Accounting, banking, clerical, office or sales (except outside salespeople) in any store, office, department public utility, or any automotive or horse-drawn passenger, express, delivery or freight service or in any other place or manner.

1. \$15 a week minimum — in cities over 500,000 population.

2. \$14.50 a week minimum — in cities between 500,000 and 250,000.

3. \$14 a week minimum — in cities between 250,000 and 2500.

4. 20 per cent increase a week in all towns below 2500, if this increase is not in excess of \$12 a week.

C. Employees now earning more than minimum.

1. No (hourly) wage reductions — even though working hours are reduced.

2. Employers agree to increase pay of these people by an equitable readjustment of all pay schedules.

*Wage Groups Classified*

Preliminary classification of wage groups:

A. Workers in factory — 35-hour classification. Factory or mechanical workers or artisans.

B. Clerical — 40-hour classification includes clerical, service and retail groups such as: Barbers, beauty parlor operators, dishwashers, drivers, delivery men, elevator operators, janitors, porters, watchmen, restaurant workers, filling station operators, maintenance force, including charwomen, window washers, etc.

C. Groups not covered by code:

1. Professional occupations.

2. Employees of federal, State and local governments and other public institutions and agencies.

3. Agricultural labor.

4. Domestic servants.

5. Persons buying goods and selling them independently.

*Data on Child Labor*

1. No person under 16 years of age shall be employed after Aug. 31, 1933.

2. Persons between ages of 14 and 16 (not in mechanical or manufacturing industries) for not more than 3 hours a day between 7 A.M. and 7 P.M. — these hours of employment not to interfere with hours of day schools.

*How Prices May Be Increased*

A. Prices may be increased to cover:

1. Increased cost of production and distribution.

2. Other costs and taxes resulting from recent legislation.

3. Cost as of July 1, 1933, can be taken as base for any price increase.

4. No one shall make a Profit on the Increase in price.

B. No price increase on any merchandise sold after July 1, 1933, by more than is necessary to cover above actual cost.

C. No profiteering.

D. Before boosting prices, all sellers must give full weight to probable increases in sales volume.

*Subject to Contracts*

A. Burden of price increase on the buyer.

1. Where before July 16, 1933, purchasers contracted for goods at a fixed price for delivery during the period of the President's agreement (Aug. 31, 1933 — Dec. 31, 1933).

## Code Supersedes Agreement

- ### Certain Exceptions Made

- ## CERTIFICATE OF COMPLIANCE

## Instructions

- B. In cases where a specific code has been submitted by your industry with wage and hour provisions varying from the President's agreement and where these variations have been accepted by a NRA deputy administrator:
1. Sign the President's re-employment agreement.
  2. Mail it to district office of Department of Commerce.

3. Comply with its provisions as far as possible.
4. Sign the Certificate of Compliance with this endorsement:  
 "To the extent of NRA consent as announced, we have complied with the President's agreement by conforming with the substituted provisions of the code submitted for the ——— trade or industry."
5. Present Certificate of Compliance to your local postmaster, who will post your name on the honor roll and deliver the NRA Blue Eagle.

### *Sundays Legal Holidays*

You are to proceed on basis on which you have submitted your signed agreement.

All overtime to be paid at rate of  $1\frac{1}{3}$ .

All employees in foods trade (retail and wholesale) are authorized to work 48 hours a week (except outside salesmen and delivery men).

All Sundays are considered legal holidays for purposes of retail trade.

A. Who owns the NRA insignia?

1. It is the sole property of the United States government.
2. It may not be used or reproduced without authority of the NRA.

B. Where to get additional insignia?

1. From authorized printers.

C. How to order insignia.

1. Buyer must prove right to use insignia.
2. Seller must prove right to reproduce insignia.
3. Official ( $1\frac{1}{4}$  inch) seal must appear on each order for insignia. Get this seal from your local postoffice.

### *How Women Can Help*

What can a woman do to make this plan a success?

1. Sign the consumer statement of co-operation.
2. Take this postcard to your local Chamber of Commerce.
3. Get a consumer's seal which you place in the window of your home.
4. Live up to agreement by supporting and patronizing employers and workers who are members of NRA.
5. Get your friends to co-operate also.
6. Have faith that the prosperity of the U. S. A. — your husband's job depends upon united effort in this common cause — remember  
 "United We Stand — Divided We Fall."

### *Benefits under Agreement*

- A. More jobs created — reduces unemployment — spreads employment.
- B. More money in wage earners' pockets (larger total wages).
- C. Increased purchasing power:
  1. 1,000,000 men put back to work now at \$15 a week means \$15,000,000 a week increase in purchasing power.
  2. A family of four, earning \$5 each a week, earns \$20. Under NRA wage requirements this family now earns \$60 a week or more.
- D. Eliminates child labor.
- E. Eliminates sweat shop working conditions and wages.
- F. Sets up mechanism for policing industry by itself (NIRA).
  1. Each industry eliminates its own unfair competitive practices.
  2. Each industry substitutes trade co-operation in place of uncontrolled individual competition.
- G. Increases opportunity for long range economic planning by industries.
- H. Gives peace of mind and greater sense of security to all workers.

The cotton textile industry submitted the first code, and it was approved by the President. This industry is notorious for the practices which the law was designed to rectify — long hours of employment, low pay for its workers, and ruthless methods of competition. Representatives of the industry, labor, and the government sat down in public and in a few days worked out their differences, agreeing to increase minimum wages to the purchasing power level of 1926, reduction in hours of labor to two shifts of forty hours a week, checking overproduction, and the abolition of child labor. As President Roosevelt said: "After years of fruitless effort and discussion, this ancient atrocity went out in a day, because this law permits employers to do by agreement that which none of them could do separately and live in competition."

However, the forty-hour week or the minimum wages established by the textile code should not be accepted as a precedent by other industries. Such a work week and such wages generally would not scratch the surface of our task of putting large numbers of men back to work and restoring consuming power. Under the present conditions an average work week of thirty-two hours with a minimum wage of 45 cents an hour for the lowest paid type of workers would perhaps accomplish this purpose. But it would be absurd to fix an inflexible schedule for all industry.

While the President allowed trade organizations to submit codes, if it so happened that difficulties within an industry made it seem impossible or tended to delay unreasonably the presentation of its code, the law empowered the Recovery Administration to hold hearings and enforce a code for such an industry on its own motion. This crisis demanded action.

There were bound to be some recalcitrants, those who were unable to see or were stubbornly unwilling to see that our economic system is undergoing a rapid change, and a change that is necessary if the nation is to be preserved. There were some who refused to coöperate in this program and took refuge in their Constitutional rights. Some industries doing a strictly State business expected to do that, and while the law gives the Administration power to control all industry "in or affecting interstate and foreign commerce," in all probability the courts will determine this issue. The President depended for the success of this recovery program

on a force greater than the law — a force more powerful than anything else — public opinion.

**Trade Organizations.** When a trade association is managed with intelligence, and has experience and sufficient funds, it can do an extraordinary number of things that should be done by an industry and not by the government.

Freedom for healthful competition walks arm in arm with mutual aid in the ideal trade organization. Is there need for a study of new markets for cotton? Are data wanted on employment conditions in a certain trade? These tasks and countless others are undertaken by associations. They usually are costly jobs, but if a trade body is wisely directed it never undertakes more work than it can handle. When an association drains its own funds and calls on some bureau in Washington for aid in work to be done for its industry, it marks a sad day for the cause of individualism. It costs real money for an industry to support its own coöperative services, but in the long run it is safer and healthier than the practice of keeping one hand on the apron strings of a Federal bureau.

Trade organizations when established in the spirit of meeting the needs of society and attempting coöperation between manufacturer, worker, salespeople, and consumer can do much to develop prosperity.

### QUESTIONS

1. Why is the textile industry considered important?
2. What factors enter into production?
3. What responsibility does the entrepreneur assume?
4. From the ownership viewpoint, how may business organizations be classified?
5. List ten typical individual business organizations that you know.
6. How does a high import tariff on spinning machinery affect a cotton farmer?
7. How would a world-wide overproduction of wheat affect a wool raiser?
8. If you advocate Federal aid for the farmer, what form would you advise?
9. In what way does a farmer's financial problem differ from that of other business men?

10. What are the responsibilities and advantages of operating your own business?
11. How does a partnership differ from an individual enterprise?
12. What distinguishes a corporation from a partnership?
13. In a very successful business, who usually receives the greater return on his investment, the bondholder, preferred stock holder, or common stock holder?
14. In an established business, which of the above offers the greatest degree of safety of principal invested?
15. What are some of the functions of farmers' coöperative agencies?
16. How do consumer's goods differ from capital goods?
17. Considering the manufacture of a gingham apron, trace its primary and secondary factors of production.
18. Why may we expect the southern states to surpass New England in cotton goods manufacture?
19. What are some of the factors in a location that contribute to the success of a particular industrial site?
20. Why do industrial centers shift from time to time?
21. Distinguish between fixed and circulating capital.
22. What is meant by *depreciation*; how is the amount calculated?
23. What factors govern the success of a manufacturing enterprise?
24. What factors determine the amount of loanable capital in any community?
25. What personal qualities contribute to success in the textile field?
26. Describe the responsibilities of the business man.
27. Explain the operation of the law of diminishing returns in the case of advertising a sale of cotton dresses.
28. In what way may a marginal producer be considered a menace to a particular industry?
29. How may the sale of a by-product affect the sale of the main article?
30. Why is organization important in the textile business?
31. How do American and European mills differ in organization?
32. What are the chief rewards of the true entrepreneur?
33. What advantages in management does a large plant offer over a smaller one?
34. Prepare the organization chart of a local industrial plant.
35. Compare the steps in manufacturing shoes with those in producing a garment.
36. How does the present-day production of clothing differ from the method used 100 years ago?

37. What materials enter into the production of modern men's garments?
38. Distinguish between a custom-made and a readymade garment.
39. What arguments can you advance in favor of large-scale mass production?
40. What advantages does a smaller mill offer?
41. Briefly outline the work of the industrial relations department in a woolen plant.
42. What factors have contributed toward increasing wages and decreasing hours of labor during the last century?
43. What are some causes of high labor turn-over?
44. Why is accident prevention in industry important?
45. What advantage does a concrete building offer to a textile manufacturer?
46. In laying out a cotton mill, what physical and mechanical factors must be considered?
47. How can an industry overcome the disadvantages of both a *laissez-faire* and a mercantilism policy of government supervision?

## CHAPTER VII

### BUYING AND SELLING

**Importance of Marketing.** The average person may be inclined to minimize the marketing function in the clothing industry, but it is actually one of the most important branches of production. It is only through the process of trading or exchange that goods are transferred from the primary producers, such as growers, mill owners, manufacturers, etc., to the hands of the various middlemen and finally to the consumer. Raw materials, finished cloth, costumes, etc., must all go through this process of exchange before they are in the hands of the people who use them.

**Exchange.** We have defined the term exchange as the transaction of parting with a commodity in return for something else regarded as the equivalent in value. This method of exchanging one commodity directly for another of equivalent value was the first method of doing business and was called *barter*. Later this method was improved by the introduction of a common medium of exchange — such as gold or silver coins — and the value of commodities began to be measured in the terms of *money*. Today, all buying and selling is done in terms of money, and the exchange value or price is quoted in terms of money instead of in terms of equivalent values of other commodities.

*Marketing*, or the circulation of products to the consumer, existed back in the domestic and guild periods, but it was not until the beginning of the factory period that trading became an important force in society. With the beginning of specialization in industry each person produced only a small part of the things required to meet his various needs, and relied for the satisfaction of his other wants upon being able to exchange his surplus product for the surplus products of others. Thus, if a man made knitting needles, he would exchange these needles for food, clothing, etc. During the early industrial development marketing was done

directly by the producer, but with increasing production and the subdivision of labor under the factory system there came the need for extensive markets and for a special body of *traders* to carry on the process of exchange.

**Merchants and Middlemen.** A *trader* or *merchant* is one who is engaged in the business of buying commercial commodities and selling them again for profit; especially, one who buys and sells in quantity, either by wholesale or retail. One who buys without selling again, or who sells without having bought, — as where one sells the products of his labor, — who buys and sells exclusively articles not the subjects of ordinary commerce, or one who buys and sells commercial articles on salary and not for profit, is not usually termed a merchant. Those who buy and sell on a commission for others are termed commission merchants. A merchant tailor is a tailor who furnishes the materials for the clothes that he makes.

We discussed in a previous chapter the appearance of early merchants who relieved textile manufacturers of the responsibility of seeking customers for their product. This was the beginning of a professional body of traders or middlemen. It is true that the methods of these early traders were very crude. Goods were sometimes carried on the back of the trader or that of his horse and were peddled from house to house or farm to farm. Of course, with such a method he could not cover much ground, and we find the natural result — the opening of a store or central trading point.

In the early development of the textile industry in the United States there were no middlemen or professional traders, and the mills were obliged to find their own market. Accordingly, the cloth was sold through the mill store directly to the neighbors in the surrounding country. Some of the mill owners found this method of marketing their goods inadequate and the local market too small. Accordingly they went to stores in the near-by cities and tried to induce them to sell the mill fabrics. Previous to this time most of the fabrics carried by the stores were the popular imported textiles. One store agreed to handle mill products and turned them over to an auctioneer to sell. Heavy sheetings were sold at thirty cents a yard, when the owners would have been

satisfied with twenty-five cents. This was the beginning of the first selling agent.

Eventually, in 1809, the products of the mills were sold through stores in Boston, New York, Philadelphia, and Baltimore. These stores sold the textiles on commission and later became known as the first *commission houses*.

**Function of the Middlemen.** According to the economic definition of production, goods are in the process of production until they are in the hands of the ultimate consumer. In other words, all the agencies that handle a commodity, such as cotton sheeting, during its progress from the primary producer to the buyer who actually puts it into use are called producing agencies.

It is true that in the business world they are generally spoken of as distributing agencies, but since they do not, strictly speaking, transport or distribute the commodities, the term distribution is not a correct one to describe their function. Marketing or exchange is a more appropriate term, and the agencies conducting the marketing are more correctly called *middlemen* or *traders*.

While the middleman, merchant, or tradesman does not directly produce concrete commodities such as clothing and other wearing apparel, he does add to its utility by causing a change in its form and location, so as to make it more accessible to the consumer. To illustrate: He buys shoes in large quantities; that is, in case lots. He buys many cases, each containing shoes of a different size and style. He places them in a conspicuous place in a store, where the consumer may see them, try them on, and examine different styles. While the consumer is doing this, he has the facilities for sitting in a restful position and can satisfy his desires at leisure. If he does not see what he wants, he can leave the store without charge for services.

In the same way the middlemen give additional value to worsted or woolen fabrics by taking large lots from the mill and separating them into smaller lots — single bolts — exposing them for examination by the consumer on a table in a tailoring shop.

The middlemen or traders are the life of business in our modern world. They, above all others, have been responsible for the development of our complex industrial system, the subdivision of labor, specialization of clothing and other commodities. They

interpret the desires and needs of the consumers and determine to a great extent the kind and variety of goods sold. The activities of the trader have stimulated the development of all forms of communication, such as the telephone and the telegraph, and all means of transportation — motor buses, railways, steamships, etc. Through the services and judgments of the traders in the market we have the basis for the price standards that prevail for various commodities. The middlemen also help to finance the production of commodities during the period before they are sold to the individual consumers.

**Types of Middlemen.** An analysis of the field of exchange in the textile industry shows that the middlemen play a very important part. For example, textiles may pass through the hands of the following agencies before reaching the ultimate consumer: the manufacturer, broker, commission house, jobber, wholesaler, and retailer. It is, of course, possible to eliminate some, but not all, of these middlemen. To reach the consumer some form of retailing is necessary. This is true even if the producer sells directly to the consumer, since in such circumstances the manufacturer himself becomes a retailer.

**Selling Agents.** The selling house or selling agent arose from the great demand on the part of mills for capital to cover the cost of materials in process, and of finished goods unsold, and for the extension of the necessary credit to customers. During the early part of the 19th century this capital was obtained from merchants, who had heretofore invested their capital in an import and export business. Because they had invested their capital in the mills, they were naturally interested in the disposal of the finished product and become the selling agents of the mills. The selling agent received interest on the capital advanced and commission on the sales of the product. Later the selling agent prepared the designs for the fabrics and charged a commission of  $1\frac{1}{4}$  per cent on sales. In this case the work of gathering style information is done by an expert, called a *styler*, who makes fabric designs, which are worked out as follows: Designs with specifications are sent to the mill which makes up samples called "blankets" and submits its estimate of the price at which the goods can be delivered. The designs are incorporated into the

season's lines and the selling house sends out its salesmen with samples.

**Mill Selling Agent.** Many large mills find that they can develop a more effective selling field by becoming their own merchandising and marketing agent. In this way, by direct selling through the



MILL SALES OFFICE

Showing the selling of towels to buyers and store executives.

mill agent, they can be sure that the price is sufficient to cover the cost of production. Also, many mills found that under the old method, with a separate selling agent, they were not getting all the business that might be secured from customers. Many were being sold only one or two of the company's lines, when they could readily use three or four. It also became obvious that the company was not getting the largest amount of business possible in the territory in which it had no branch offices. The old, loose form of organization, characteristic of the textile industry, was not geared either for thorough merchandising or thorough marketing of goods. Therefore a new section was created in the mill, called a *merchandising and marketing department*.

The usual organization is as follows : First, a general merchandising manager, to whom all the individual merchandising managers report, is appointed. Then a style director, who functions in an advisory staff position, is engaged. He brings in style ideas, lays out designs, goes over the designs with the merchandise managers, and helps them to make selections and style their lines. Following this, a sales promotion department is organized with a manager in charge. This department forms contacts and coöperates with both the merchandising phase of the business and with the general trade. An advertising department is an auxiliary of the sales promotion department. A general sales manager is appointed to centralize control and proper supervision over the activities of the sales force.

**Commission Merchant.** The commission merchant is a middleman who sells textiles in a certain district on a commission basis. He may be either an individual or a firm authorized to sell textiles under his own name or under the name of the foreign or domestic manufacturer whose product is handled. This agent is intrusted with the possession, management, control, and disposal of the goods to be sold. Sometimes mill owners and manufacturers find that it is to their advantage to have a controlling financial interest in the commission houses.

**Factor.** We have seen above that commission houses not only sell merchandise for mills which they represent but finance these sales as well. But with the development of the textile industry the mills have become more or less their own selling agents, and wish to continue to be so. Hence the selling function of the commission house has gradually disappeared, and a new agency has arisen, called a *factor*. This agency deals with the financial side of the sales, and exercises only a general supervisory and counseling attitude in respect to selling policies. In other words, the factor assumes the purchase and the discount, on a notification basis, of receivables (paper) created out of sales by mills, converters, and importers in textile and related fields. In addition, but in a gradually decreasing number of instances, a factor may at seasonal periods advance money upon finished merchandise. Such merchandise security against which advances are made is consigned to and pledged to him, so that he has a valid lien thereon either by

actual possession or notice of lien filed pursuant to law, or both. Advances against merchandise evolve into accounts receivable when the goods are sold and shipped, so that the factor's loans are not only secured but automatically repayable.

**Jobber.** Selling agents usually exact very strict terms from the purchaser. Many dealers in textiles are unable to make quick payments, and consequently are willing to pay a higher price for textiles, provided they receive better terms of payment. Therefore, an agent called a *jobber* has arisen, who buys textiles in bulk from the mills and resells them to smaller dealers at a higher price, in smaller quantities, and with long-term payments.

**Broker.** Textile manufacturers often authorize an agent to make a business transaction, such as a contract for raw material, unfinished cloth, etc. Thus, there are cotton brokers who purchase raw cotton for mills, and also cotton brokers who sell raw cotton for the farmer. The same practice applies to textiles, etc. The broker differs from a commission merchant in having less power.

**Converter.** The term converter is applied to agents who purchase cloth (either cotton or silk) in the gray — that is, as it comes from the loom. This cloth is finished by the converter — that is, made white (bleached), printed, dyed, or otherwise finished, according to demands of customers or anticipated demands.

*Finishing* is a trade term which in its broad sense comprehends all of the numerous processes and operations to which woven fabrics are subjected after leaving the loom. In the case of cotton goods, it includes tentering, stretching, calendering, lustering, watering, glazing, etc.; in the case of silk, such operations as stiffening, drying, calendering, and lustering; in woolens, perching, mending, burling, inspecting, scouring, fulling, shrinking, steaming, shearing, brushing, napping, pressing, measuring, folding, etc. The number and character of the finishing operations to which a fabric is subjected vary according to the use to which it is to be put and to the particular feature or features it is desired to emphasize.

**Wholesaler.** The entire structure of marketing in this country depends on the wholesale function — namely, the buying of large lots of goods and breaking them up into smaller units, which can be actively merchandised through intelligent coöperation

with retail stores. The bulk of America's manufactured products are disposed of in this manner. Many manufacturers who had departed from the fundamental methods during the era of prosperity, and spent much in an experiment to eliminate the wholesaler, are now happy to return, poorer but wiser, to the first principles of marketing. The wholesaler receives his orders and demands from the retailer, who is in direct contact with the consumer. The wholesaler then transmits these orders to the producer.

Of the three basic methods of distribution (house-to-house solicitation, direct mail solicitation, and retail marketing), distribution through retailers is economically sound as well as the most practical of all known methods. It is impossible for manufacturers to maintain warehouses in widely scattered territories, and to render "on the spot" service to retailers. In other words, the wholesaler is a necessary link in the chain. But no manufacturer, operating his own warehouse or service, should attempt to distribute competing makes. Neither should he attempt to service several trading areas from one warehouse point. These functions are the wholesaler's. But if the wholesaler is successfully to render his service, certain principles of operation must apply, such as :

(a) The manufacturer should not sell to other wholesalers within the same trading area.

(b) The wholesaler should not attempt to cover several trading areas from the same warehouse point.

(c) The wholesaler should not attempt to sell any competing brands of the same commodity.

(d) The manufacturer must have a price structure that will enable the wholesaler to sell to all classes of retailers, including department stores.

**Traveling Salesmen.** Most distributors have introduced their merchandise in the different parts of the country by means of traveling salesmen. The "drummer," as he used to be called, is a commercial traveler or solicitor, the agent or representative of a manufacturer, importer, or other wholesale dealer, who procures and transmits orders for the goods of his firm in quantity, by personal solicitation and the exhibition of samples. A drummer is not a peddler, for he carries no goods for delivery, makes no

direct sales, and transacts business only with dealers, never with consumers.

The cost of maintaining a traveling sales force is large, due to the expenses and salary of each member. This is the old method of direct selling. Can this means of distribution be eliminated? An investigation by the National Credit Office in 1927 shows that there are 95,000 small villages with populations of not over 500, now consuming 42 per cent of all cotton goods made in this country, and 3750 small towns with populations of 500 to 10,000 consuming 16 per cent. This means that 99,000 villages and towns with populations of less than 10,000 use 58 per cent of all the cotton goods produced by our mills, and most of the 95,000 rural places can be reached only by salesmen traveling in automobiles, carrying samples of such goods as are generally wanted in rural communities.

One of the methods of selling wearing apparel is by means of house-to-house canvassers, selling in direct competition with retail stores. Upward of 200 different articles are being sold by this method at the present time, including practically all of the staples dealt in by retail stores. The list stops only at the point where the initial payment required becomes so high as to discourage the housewife from buying.

**Resident Buyers; Group Buying.** Group buying of clothing owes its existence to the rapid changes in styles of costumes. So rapid are the changes in style that selling style merchandise on the road is fast becoming a lost art. It is not always safe for a retail buyer to purchase apparel from a traveling salesman. Styles often change from month to month, and by the time the dresses are delivered they may be a month out of style. Then again, the cost of sending salesmen to call on individual stores is very great, while buying in large quantities by a single agency means a lower price for the retailer of a small store. This group buying is normally carried on in the style center, New York City, by a resident buyer, who buys for many stores in the country, thus reducing the expenses of each store.

As to the question of whether a local resident buyer is competent to select merchandise for sale in Ohio or Oregon, the manufacturer should remember that all sections of the country are linked by a similarity of taste which is growing more uniform every day. Any

successful retail buyer of style merchandise should be able to come to New York and buy for any other store in the country with success. The radio, movies, and style magazines have caused style information to be available in every part of the country, so that consumer demands are everywhere similar.

**Retail Stores.** The final sale of textiles must naturally be in small units. Since most wholesalers tend to specialize, it is natural that there must be some agency that will bring together textiles of all kinds and dispose of them in small quantities. The retail dry goods store has undertaken this task.

*Dry Goods* is a popular term in the United States for textile fabrics and related articles of merchandise, as, cloth, shawls, wraps, garments, blankets, carpets, ribbons, yarn, thread, upholstery, millinery, etc., in distinction from hardware, groceries, clothing, etc. In this sense the term is used in the United States exclusively, though the term is not, as is generally supposed, of American origin. The first recorded use of the term "dry goods" to describe textile fabrics collectively occurred in a report to the English House of Commons in 1745. In England, Scotland, Ireland, Canada, and all other English-speaking countries, "mercery" and "drapery" are the terms used to describe textile fabrics collectively.

The dry goods store is found in every village and hamlet, and is a center of trade in all communities. In the larger towns and cities the dry goods interest forms one of the most important departments of business, and greatly helps in sustaining all other branches of trade. The consumption demand for dry goods increases in a ratio corresponding to the increase in population. A business of such magnitude, involving so much capital, and intimately interwoven with the wants of our modern civilization, requires the best management possible.

**Department Store.** A department store is a retail store in which the different lines of merchandise kept for sale are displayed in separate departments, and which, so far as local conditions permit, aims to supply all of the material wants of its possible customers. In the large establishments of this character a buyer and a force of salespeople are employed for each separate department, and the volume of business transacted, profits, losses, expenses, etc., of



STOCK

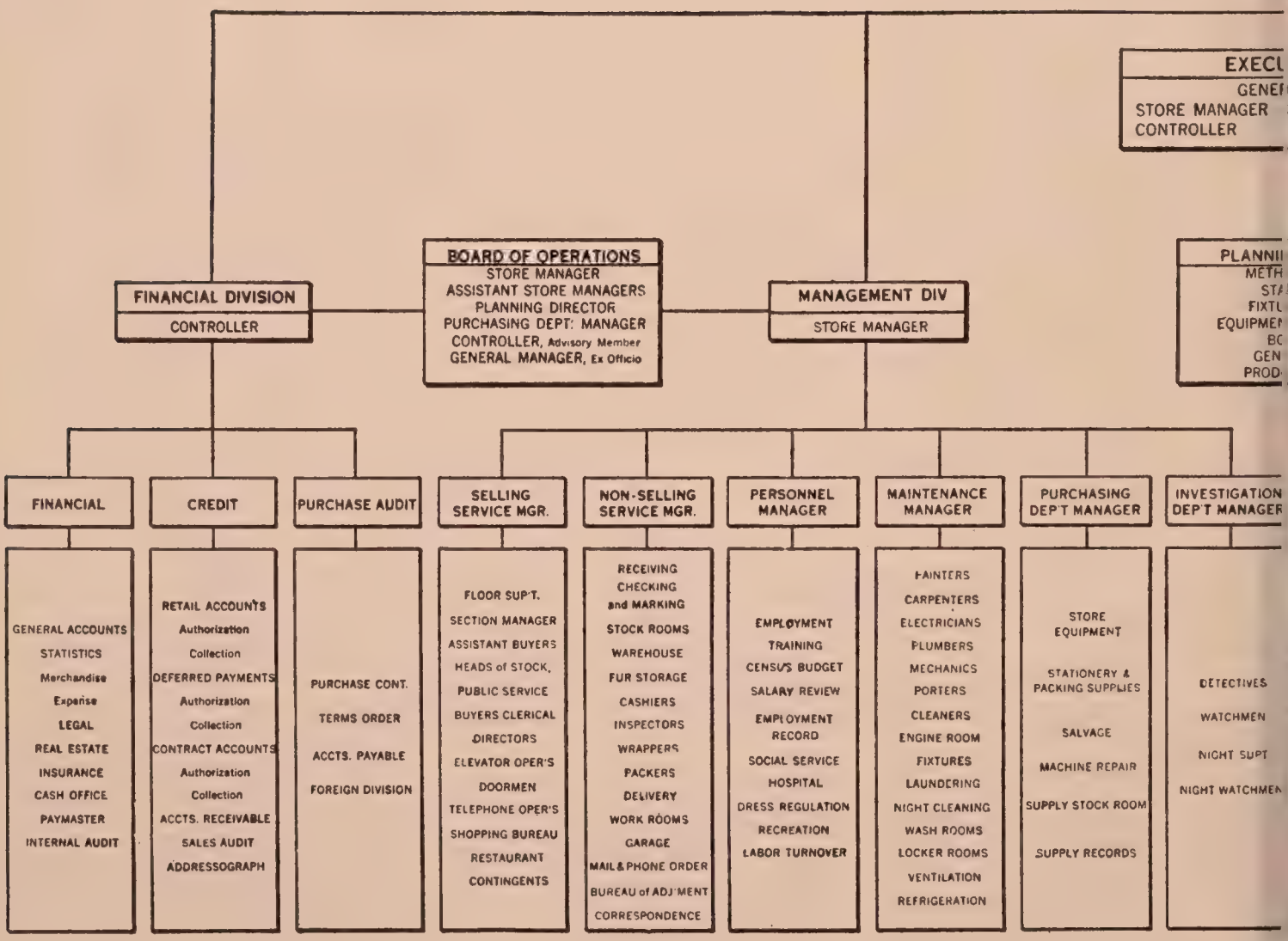
BOARD

PLANNING

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EXECUTIVE  
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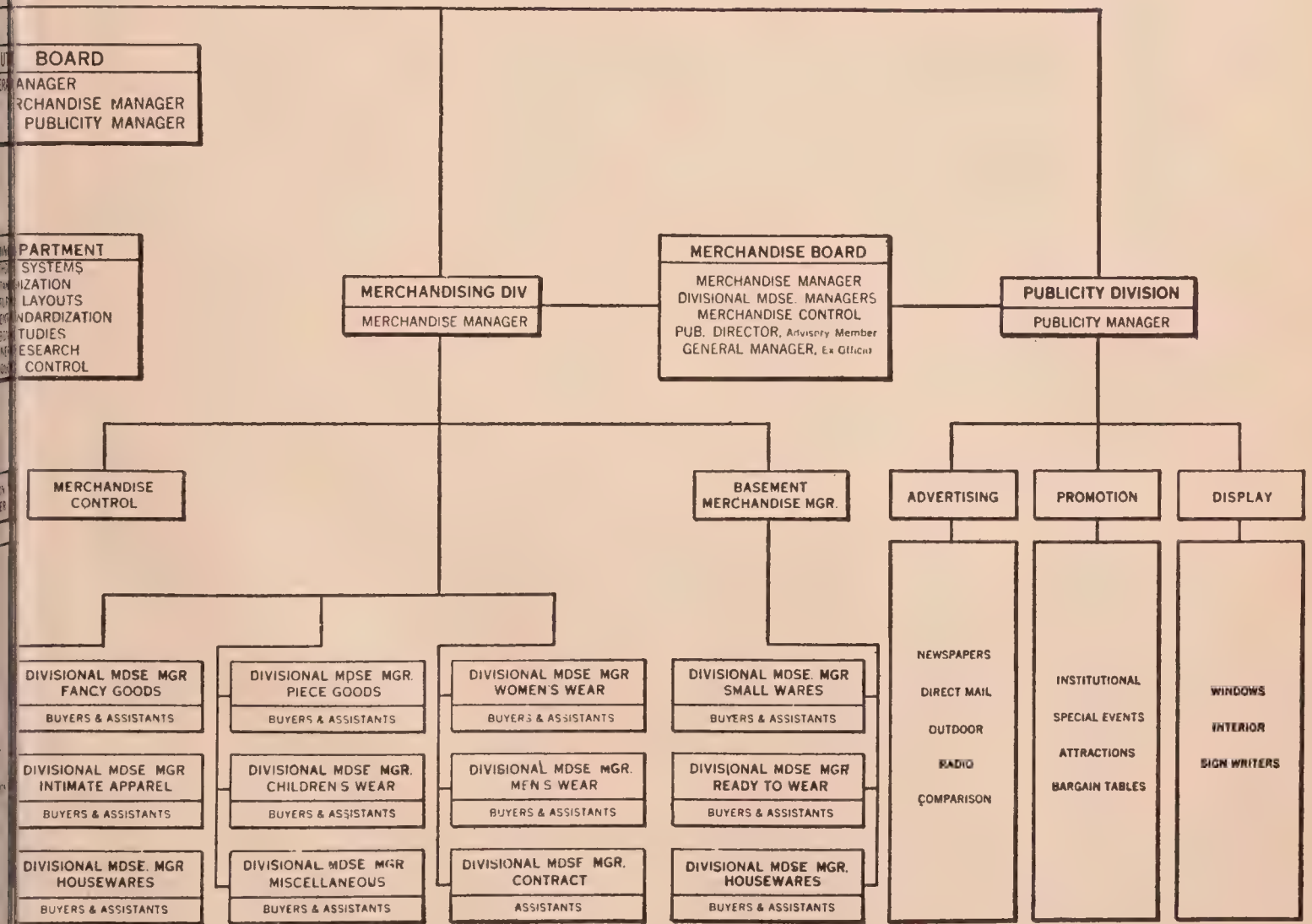
DIRECTORS

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TUDIES  
RESEARCH  
CONTROL



RETAIL DRY GOODS STORE



each are kept in separate accounts. In dry goods department stores, dry goods represents the predominating division and largest investment, all other lines partaking of the nature of auxiliaries. The introduction of the department store plan into the United States is generally credited to A. T. Stewart, of New York City, who is said to have got the idea from the dry goods establishment of Todd, Burns & Company, of Dublin, Ireland, about 1850. The departmental idea first gained prestige in New York City, but soon found its way to neighboring cities and States, and has been generally adopted in a more or less modified form in towns, large and small, throughout the country.

The modern retail department store can not be said to have been the direct invention of any one person or group of persons. It is a natural product, evolved from conditions that exist as a result of fixed trade laws. Its development has been slow and gradual, though constant, during the past sixty years. At first, fancy goods and notions were added to the stock of general dry goods; after a while laces and embroideries were added. Allied lines were added year by year, one at a time. When millinery and ribbons and a department for the making to order of mantles and costumes were added, the great increase in the number of feminine customers which these departments attracted made the addition of new departments somewhat more rapid. By slow degrees the following lines were added to metropolitan stocks in the order named: Carpets and upholstery, furs, women's muslin underwear, boys' clothing, furniture, crockery and glassware, house furnishings, men's clothing, toys, leather goods and trunks, cutlery, silverware, patent medicines, stationery and books, jewelry, shoes, groceries, hardware, and stoves. The later additions include pianos, sporting goods, tobacco, the restaurant, optical goods, drugs, the physician, the dentist, the manicurist, the photographer, and the undertaker.

Before the advent of the department house, the stores of most of our large cities were of the average dimensions of about 25 feet front, and from 75 to 150 feet in depth, the business being usually confined to the ground floor. There were stores selling only dry goods proper, with others selling fancy goods and notions. The former were greatly in the majority.

The late Mr. John Wanamaker stated that : "The department store is in a sense a return of the old style of country cross-roads store, where articles of every description were sold."

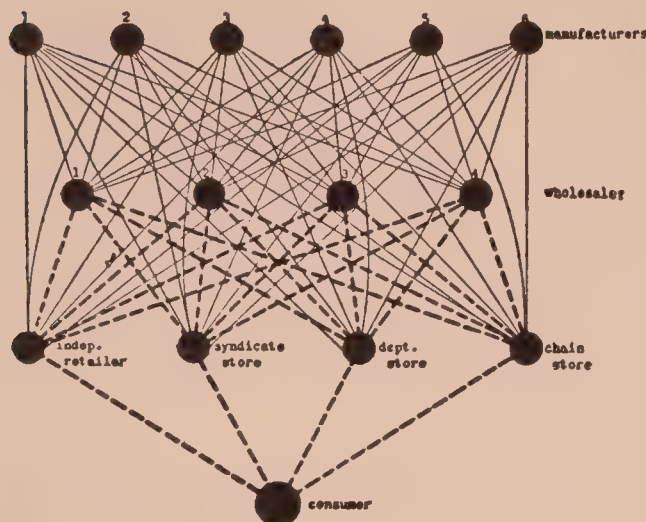


CHART OF DISTRIBUTION

Showing how six competing textile manufacturers approach a prospective purchaser.

**Selective Distribution.** Selective distribution means that the manufacturers select the wholesalers they wish to have market their merchandise and in most cases determine the prices, conditions of resale, etc. One who is not thoroughly familiar with the method might question its desirability, but experience shows that results have more than justified the efforts involved. In most cases

the manufacturer sets the price not only to the wholesaler but also to the retailer. In a great many cases he even specifies or suggests retail prices, and in advertising by circulars, magazines, and over the radio endeavors to help promote the sale of the merchandise not only through the wholesaler but through the retailer and the ultimate consumer.

This method of selective distributing can be illustrated by the experience of two firms manufacturing underwear. One mill undertook to sell direct to retailers. The first year selling expense reached 30 per cent, and loss on bad accounts 25 per cent. Another mill adopted selective distribution, and its total selling expense on actually millions of dollars of business last year was \$106. The number of accounts, of course, was small, and there were few if any losses. Having once chosen their

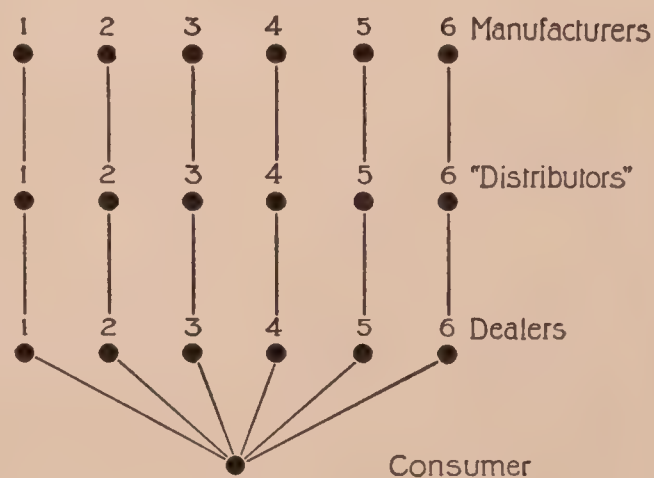


CHART OF DISTRIBUTION

Showing how six competing automobile manufacturers approach a prospective purchaser.

outlet, the work of selling was over so far as the mill was concerned.

**Qualifications of a Trader.** The success of every distributing agent depends upon his ability to sell the textiles that he receives. The selling agent and commission agent must know the tendency of the styles and of "human wants for textiles" in order to know the textiles that should be manufactured by the mill. In addition he must know how to sell textiles in large quantities and be able to quote prices in terms of large sales. The same statement applies to the jobber, who acts between the selling agent and the retailer or small manufacturer of clothing. He must know the values of textiles in terms of the needs of the selling trade and the small retailer. The converter must know how to determine the needs of the trade and to give directions for finishing the cloth. The retailer sells direct to the consumer in small units and naturally renders greater service to the consumer than any of the other distributing agents.

Certainly in these days there is no other problem connected with the textile industry so important as the selling of its merchandise. The first cardinal point in any sales operation is undoubtedly the determination of the market. By this we mean:—Where are the customers located, how many are there, what is the size of their business, how and when do they buy, what is their credit, and their capacity for handling merchandise? Next a determination must be made of how the accounts are oriented geographically with respect to trading centers, transportation facilities, cost of transportation, and other related items. From these facts can be worked out the expense of moving salesmen about the territories. A program must then be laid out determining whether sales shall be made by wholesale distributor, whether they shall be direct, or whether a combination of the two methods shall be used. If company warehouses are a necessary part of the distribution system, their locations must be determined, the size established for each location, and the cost of operation estimated. These factors are dependent upon the capacity of the local market, as determined in the survey previously mentioned, to absorb merchandise. They are also determined to a certain extent by the shipping facilities and by the promptness with which customers expect delivery of the goods they have ordered.

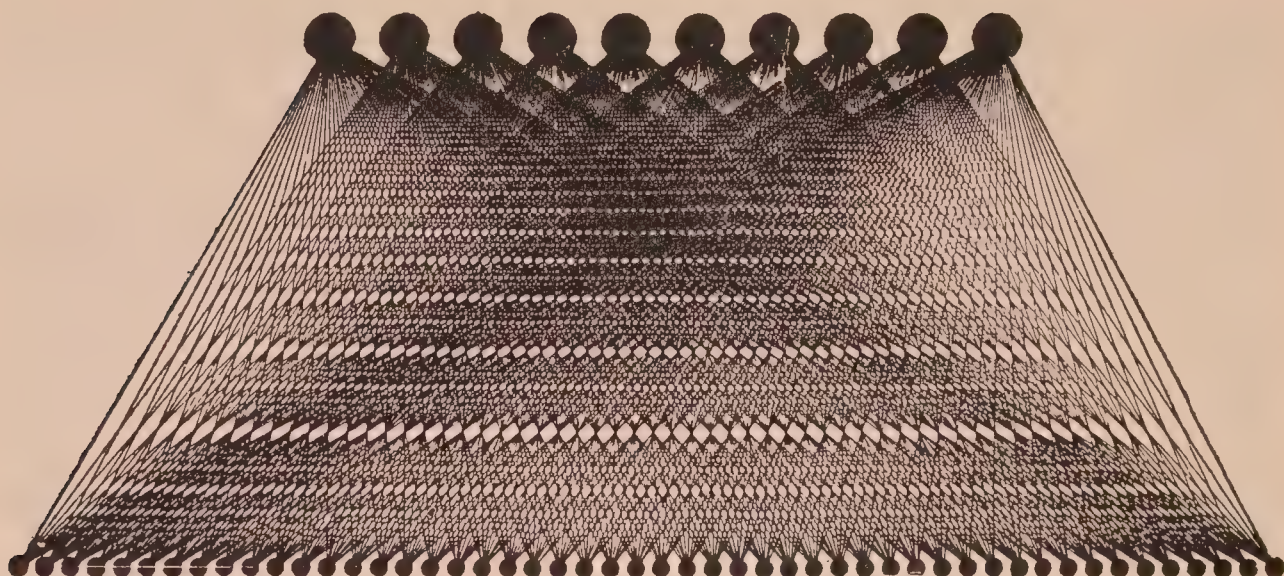
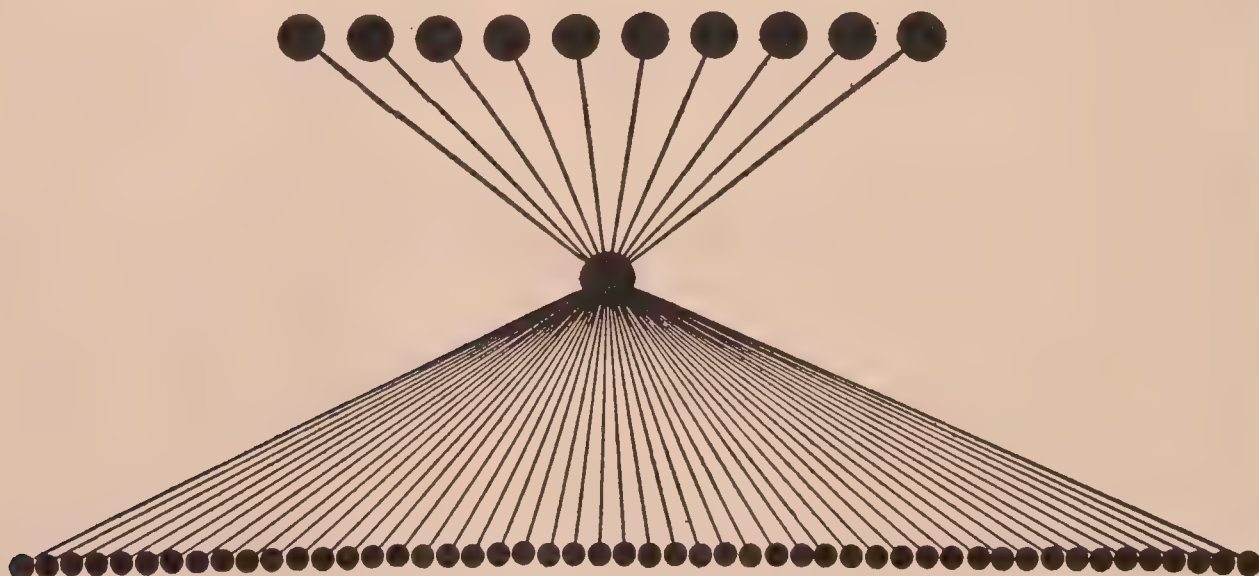


CHART WHEN EACH OF 50 RETAILERS SENDS AN ORDER TO 10 FACTORIES

Each store sends in an order to each factory; each factory sends one shipment to each store; 10 orders from each store; 50 shipments from each factory; 500 orders, 500 shipments; 500 times the minutiae of detail involved in receiving and filling an order, and receiving and checking a shipment, are gone through.



*Chart Courtesy Wholesale Dry Goods Institute*

CHART WHEN 50 RETAILERS BUY AND 10 FACTORIES SELL THROUGH ONE WHOLESALER

Each factory reaches 50 retailers; each retailer reaches 10 factories through one transaction. Sixty transactions instead of 500; 440 transactions eliminated. An 88% reduction in the number of transactions between 50 retailers and 10 factories.

If the sales approach is to be made direct, the customers must be divided into classes of accounts, and decisions must be made as to how often the customers in each class of accounts are to be

approached. Having done this, and having determined how many calls each salesman can make in a locality in a day, it is possible to divide the sales area into individual salesman's territories, which may then be grouped into sales districts as circumstances direct.

A successful buyer and seller of textiles should have the point of view of the selling and buying public. The buying public has certain needs. The selling public should ascertain these needs by an analysis of the demands and requirements of the consumer within his financial ability. The selling agent should attempt to meet the demands at a reasonable profit above the cost of selling.

The success of all trading agents depends upon the ability: (a) to determine the needs of the customer and to meet them by offering the proper textiles and service; (b) to be sympathetic with the interests of the customer and try to win his confidence; (c) to know the textiles one is selling so well as to be able to answer any question about them, their use, value, advantages, and disadvantages; (d) to sell scientifically by bringing out the selling points of the different kinds of textiles and not attempt to sell them by name only. A successful selling agent should know the technical side of textiles — their uses, how they are made, the raw materials, yarns, structure, and finish of all fabrics.

To become a good buyer you must:

1. Know your customers.
2. Know your merchandise.
3. Coöperate with executives and with your manufacturers.

By knowing your customers you will know whether they want fine quality, medium quality, or low quality merchandise. This involves knowing the spending power of the customer. Every store caters to a certain type of trade, and its success is measured by its interpretation of the customers' wants, and the ability to offer merchandise which will build up prestige and bring the inevitable reaction of buying. If the buyer knows his merchandise well, he will be able to work with the manufacturers to mutual advantage and profit.

The clothing manufacturer sets three rules for himself:

1. Make what the public wants.
2. Sell it for what the public can pay.
3. Perform these operations at a cost that yields a profit.

Under one or another of these points are covered all the efforts that must be expended in order to get the most out of any given industrial concern. This does not mean that such efforts, even though wisely conducted, will invariably yield a profit, but it does mean that such efforts wisely conducted will yield the greatest return possible.

**Reducing the Cost of Marketing.** With the development of mass production and marketing in America, businesses are growing larger year by year. Business has passed through and out of the pioneer stage. A new kind of leadership is required for the new kind of business. Mass production calls for mass marketing, which implies more than the problem of mere quantity. It means that the large quantities of goods turned out by the factories should be put into the hands of the consumers at the lowest possible price. This involves the elimination of every possible waste in handling and selling.

Various attempts have been made to reduce the tremendous cost of marketing, particularly in wearing apparel, by eliminating the charges of some of the marketing agencies, such as commission merchants, jobbers, and in some cases the converters, with their large staff of traveling salesmen. The principal means introduced to eliminate the cost of distribution are: (a) direct selling, (b) resident buyers, (c) chain stores, and (d) group buying.

In most of these substitute methods large quantities of goods are purchased directly from the manufacturer at a special low price. In the chain-store distribution we find the cost of selling is further reduced by the elimination of charge accounts and delivery service.

The five-and-ten-cent stores distribute cheap imported and domestic smallwares. Their large volume of business has been little affected by the depression, which emphasizes the fact that our people want to buy in the lowest-priced market.

**Elimination of the Middle Man.** The widely accepted idea that the vast bulk of the manufactured product of this country reaches the ultimate consumer through the medium of wholesalers and middlemen of various sorts, and thence through the retailer has been disproved by statistics. Nearly 30 per cent of approximately \$60,000,000,000 worth of products of the manufacturers of the

United States in 1929 was sold to industrial and other large consumers. The proportion sold by the manufacturers directly to small home consumers was comparatively insignificant, being less than 2 per cent. The nearly \$60,000,000,000 worth of manufactured products constituted 84.7 per cent of the entire product of manufacturing industry, as reported to the Bureau of the Census. The remainder of the product comes from branches of industry.

In earlier days of American industry, the selling of manufactured goods was largely separated from their production, and the group of middlemen known variously as selling agents, factors, brokers, manufacturers' agents, and commission houses intervened between the manufacturer and the wholesaler. However important this relationship may have been in times past, or may still be in certain industries, it is at present relatively unimportant in the aggregate, since less than 9 per cent of the goods sold by manufacturers passes through such agencies.

The United States Census shows that of the approximately \$60,000,000,000 worth of sales reported by the manufacturers of the United States in 1929, only 47.6 per cent passed into the hands of wholesalers, and nearly one-third of this wholesale business was handled by the manufacturers' own wholesale branches. The balance of the total sales, 52.4 per cent, was made to retailers and to consumers direct. Sales direct to independent retailers constituted 19.8 per cent of the total, while 2.1 per cent passed through the manufacturers' own retail branches.

The above figures contradict the popular belief that manufacturers sell primarily to independent wholesalers and also demonstrate that the middleman is not so important a figure in the channels of trade as formerly. While it is true that nearly one-half of the entire product sold passes into the hands of the wholesalers, there is conclusive evidence that a very large portion of this wholesale distribution is under the control of wholesale agencies directly affiliated with the manufacturing concerns.

**Middleman's Services.** Competition exists in the field of exchange among middlemen or merchants as well as among the producers or manufacturers. The merchant's or middleman's profit depends upon his talent as a merchant or trader.

Since the trader or middleman performs a service by furnishing to both the producer and the consumer price standards by which they can value their commodities, he becomes a strong factor in determining the market price. He really provides the market price for all such commodities as: (a) raw rubber, (b) raw leather, (c) raw cotton, silk, wool, etc., (d) semi-finished or manufactured commodities, such as yarns, unfinished fabrics, finished fabrics, costumes, etc.

Many people feel that the rise in prices during the past generation was due to the profits and activities of the middleman, but careful examination will show that this is not absolutely true. It is a fact that the middleman has contributed to the rise of prices to some degree, but the rise of prices was due chiefly to: (1) increase of population, (2) better living conditions, (3) increase of gold, and (4) war conditions.

The exchange process in the clothing trades, etc. contains many abuses and weaknesses and can be improved, but not by eliminating the trader or middleman. We must remember that the manufacturer who sells directly to the consumer does not determine the price. The market price governs his price even if he sells a little cheaper to the consumer than do the other agencies.

There are many different classes of traders in the wearing apparel industry. They all have a part in determining or fixing the price. Which one determines the price to the greatest extent is hard to determine.

Investigations of the cost of manufacturing and the cost of selling wearing apparel — particularly clothing, textiles, etc. — show sometimes that the total cost of selling is greater than the cost of manufacturing.

**Why It Costs More to Sell than Manufacture.** It may seem strange that it costs more to sell than to manufacture a commodity, but an analysis of the selling problem will show that this statement is often true. It may be well to outline some of the factors in the cost of selling:

(a) Determining the exact field or market.

(b) Finding the most effective system of presenting goods to the public — advertising.

(c) An investigation of the financial standing of the buying public.

(d) Investment and upkeep of building and equipment of show-room, storage, etc.

(e) Expenses and salaries of selling force and assistants.

(f) Cost of transportation — freight, trucking, storage, insurance, etc.

(g) Losses due to bad debts, depreciated goods on hand, etc.

(h) Accumulation and classification of information relating to the field of manufacturing and destination.

(i) Fair profit on capital invested.

**Market Prices.** Prices for costumes and other wearing apparel are made in the open market, in the field, over the telephone, etc., by agreements between buyers and manufacturers after inspection of samples, or by the use of model costumes, shoes, etc.

The term *market* is used with many different meanings: (a) a place where merchandise or commodities are shown or exposed in large quantities by the sellers for the inspection of the buyers (thus in certain western states bags containing the fleeces of wool are opened in large storehouses for inspection and sale to the eastern wool buyers); (b) a locality or country where commodities such as cotton goods may be sold (thus certain cities in South American countries are spoken of as the market for cotton goods for those countries); (c) a gathering place for private inspection and sales, such as the salesrooms of a dress house in New York City; (d) the prevailing prices of certain commodities, such as cotton sheetings of definite construction and weight, on a certain day.

The market may be local, national, or international. The cotton market is international, which means practically that there is one price throughout the world.

Prices for textiles and wearing apparel are usually governed by the supply and demand. In the case of raw cotton and raw silk there are exchanges — a cotton exchange and a silk exchange — where buyers and sellers meet and determine the price of the raw textile by bargaining.

The market or wholesale price is determined by the struggle in the open market of the buyers and sellers of wearing apparel or

other commodities. The traders are matching their judgments and bargaining ability against each other. One group, the sellers, represents the viewpoint of the marginal producer, and desires to secure as high a price as possible for the material it owns or controls. Another group of traders, those who represent the viewpoint of the marginal consumer, feels that the price of the commodity is too high and desires to purchase as cheaply as possible. Conditions in the industry, total demand, and available supply, together determine the final price at which exchange will take place.

Go to any wholesale district for wearing apparel — such as the cotton or silk center — and notice the bargaining between the buyers and the sellers. If the demand for silk fabrics seems to be increasing, the traders representing the silk producers will increase the price, hoping to sell their entire stock before reaction for lower prices occurs. On the other hand, if there is a falling off in the demand, the price is lowered in order to attract the least eager buyers, who are the marginal consumers.

On the exchanges the natural competition of buyers and sellers is influenced by speculation. The buyers, or those who think the market price of a certain commodity is going up, are called *bulls*. The sellers, or those who think the market price is going down, are called *bears*.

**Normal Price.** The normal price or normal value of wearing apparel is the price or value that just covers the cost of production and marketing. Of course prices go above and below the normal price and constitute the fluctuations from day to day, and these are reported each day in trade papers such as the *Journal of Commerce*. This fluctuation may be plotted as a curve or broken line as shown in the chart.

The market price is the price of a certain commodity, such as raw silk of certain specification, on a certain date. The normal price is the average of market prices for a long period of time. Of course, it is understood that the market price is the price of a commodity in large quantities, rather than a single unit — a pound.

The value of cotton sheeting of certain grades to the buyer and the seller tends to become a basis of exchange where the marginal

utility of the cotton sheeting just compensates for its marginal cost. This basis of exchange gives us the normal value of the sheeting. If it sells above its normal value, this is due to abnormal conditions, a queer change in demand, etc.

**Monopoly Price.** When a manufacturer or company produces wearing apparel or textiles under a special trade name, or by a

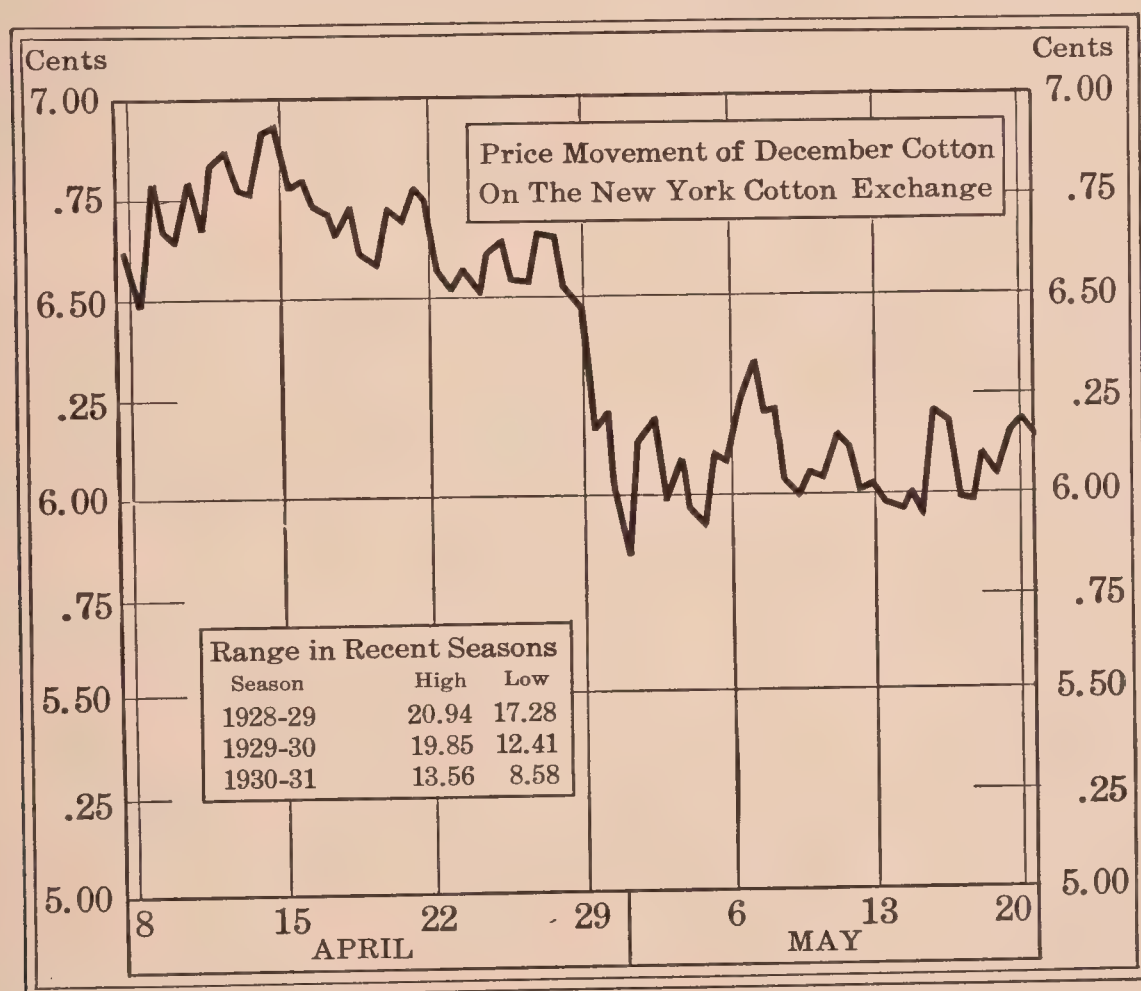


CHART SHOWING PRICE MOVEMENT OF DECEMBER COTTON

special process, there is in this brand little or no competition from others. Such exclusive right of manufacture or sale of a certain kind of commodity is called a legal monopoly.<sup>1</sup> A *monopoly* may be defined as such control of a single commodity as enables a person to fix the price of it above or below its real value or the amount it would bring under competition. The control of the larger part of the supply of a commodity is called a capitalistic monopoly. It is not necessary for monopoly to control the whole supply of the commodity. A little over half, or about 60 per cent, is sufficient.

<sup>1</sup> See Chapter III for description of legal and natural monopolies.

Thus if a certain type of wearing apparel is patented, the producer has complete control of its manufacture and sale. He can control the supply and can presumably charge as much as he wishes for it. But if he is anxious to have a large net profit and to secure that net profit as long as possible, he will set the price at the point where demand and price will produce the maximum profit. If he sets the price too high, he reduces the sales and increases the cost of advertising. A lower price will increase the sales and thus may offer greater return. He may still charge a price far above the cost plus a reasonable profit, because of his monopoly control.

A monopoly becomes an evil when it attempts to raise prices or lower wages below what they would be under competition. It also becomes an evil when it does not equitably share with the producers of raw material, employees, and consumers the economies effected by the monopoly; and when it exacts dividends beyond what a fair return for investment justifies.

**Determination of Price.** We live under a competitive system where the freedom of competition exists and where any one may enter any industry which provides a fair return. The price of any product is the result of competition among buyers and competition among producers who are anxious for a profit. The consumer, on the other hand, has an idea of what the commodity is worth to him and will not pay more. But unless there is a demand the producer will not create it. Hence we have these three factors — producers, traders, and consumers — at issue at all times, providing changes in the demand and supply as well as in the price.

The desires and wants of man are subject to change as they are satisfied. The tendency is for the price of wearing apparel or any other commodity to be that which is satisfactory to the marginal consumer, who is willing to pay the least for it. The price of wearing apparel or other commodities is not determined by the average of the total desire for the wearing apparel, but by the desire of the marginal consuming class.

To overcome this tendency and to encourage each buyer to pay as much as he will for the commodity, a selling device called the *auction* is used by certain large firms in selling wools. The buyers

are placed in competition with one another, and the goods are sold to the highest bidder, which means the highest price any buyer is willing to pay. Such a device overcomes the law of diminishing utility and markets the producer's surplus. An excellent selling device for the auction is to have the wools or worsted fabrics attractively displayed. This adds to the value of the commodity to be sold and tends to encourage the buyers to think it is of greatest value, therefore worth the highest price.

Some large mills like the American Woolen Company name their prices for auction sales at the openings. Later this policy was changed to that of naming tentative prices. Then again, this policy was followed by a practice of naming definite prices on fabrics. This new policy was established to meet competition that usually arises during the season when competitors undersell them from two to three per cent. The American Woolen Company policy of instability of prices means that with a large organization they feel able to meet any competition.

**Variations in Price.** From our experience and observation we know that the price of any wearing apparel is highest at the beginning of the season, when most people are desirous of purchasing the article, such as a new hat of a particular style. The demand for the hats is great and the supply is only normal, equal to the facilities of the factory. Later in the season when the supply is still normal, but most customers have purchased new hats, the demand is limited. Accordingly the price declines to very near the cost of production, since the manufacturer and the sales department do not care to have surplus hats left on their hands. As the price is lowered the demand for the hat increases again.

A variation in the marginal utility of a garment, that is, the variation in its ability to satisfy the needs or desires of the consumer, will also affect the demand and hence the price. Thus, if silk suits become popular while the price remains the same and the purchasing power the same, then the unit silk suit gives greater satisfaction than before. Consequently its marginal utility has increased, and people will buy it. On the other hand, if worsted becomes more popular than silk, people will not get the same satisfaction from the declining style — silk — as from the new worsted suit. Because the silk suit is going out of style its marginal

utility decreases. Hence we can say that the demand varies with the marginal utility.

On the other hand, if the silk dress has the same marginal utility and the consumer the same purchasing power, a drop in price will give a greater surplus of utility over cost than before, and people will buy more silk suits. An increase in price means that the silk suit will possess a smaller surplus over cost than before and demand decreases.

Even when the price and the marginal utility of the silk suit remain the same, we may find that an increase in the supply of money or purchasing power will cause an increase in demand. The marginal utility of the dollar has decreased, causing an increase in the utility of the suit above its cost. If people have less money, each dollar means more, and the surplus of utility is less than formerly. On the other hand, if people have more money, each dollar means less, and the surplus of utility is more than formerly.

The demand for luxuries in wearing apparel is very sensitive to changes in price. Thus we say that the demand for such products is "elastic." On the contrary, the demand for necessary wearing apparel, such as shoes, does not vary so quickly with a change in price. People continue to buy shoes, but they may demand a somewhat cheaper pair. The demand for such products is said to be "inelastic."

**Commodity Exchanges.** In an earlier section we described the stock exchange and its functions. Similarly, we find central market places or exchanges for those who wish to trade extensively in certain textile commodities, such as raw cotton or raw silk. The buying and selling in such exchanges is carried on by traders according to rules made by the governing board. These traders are usually experts trained by years of experience. They match their knowledge, judgment, and experience in their trading transactions, and as a result of the struggle there is fixed a certain market price or exchange price of each commodity. This price is announced in the daily papers at the close of the day and is generally accepted as the market price for all sections of the country. The exchange prices are not wholesale prices, but are used in determining wholesale prices.

Similar markets exist for dyestuffs, rubbers, etc. —

DYESTUFF MARKET

COAL TAR CRUDES

<i>Anthracene</i> —		
80%.....	60	— 65
40%.....	15	— 17
<i>Benzol Wks</i> —		
Gallon —		
Pure.....	20	— ..
90%.....	20	— ..
<i>Creosote Oil</i> —		
Wks gl....	13	— 17

<i>Cresol</i> ,		
U. S. P....	10½	— 11
<i>Cresylic Acid</i> —		
Gallon —		
97-99% ..	49	— 53
95%.....	42	— 43
<i>Naphtha Sol.</i> —		
Wks gl. . .	26	— 31
<i>Naphthalene</i> —		
Flakes . . .	3¾	— 4¾

<i>Phenol</i> —		
F. o. b. wks		
drums	14¼	— 18
<i>Toluol</i> —		
Gal., pure,		
wks....	30	— 35
<i>Xylol. Wks</i> —		
Gal.		
Commer-		
cial....	26	— 31

INTERMEDIATES

<i>Acids</i> —		
<i>Anthranillic</i> —		
Ref'd.....	85	—1.00
Tech.....	75	
<i>Benzoic</i> —		
Tech.....	35	— 45
Gamma..	77	— 79
H.....	60	— 65
Mono F....	1.50	—1.55
<i>Naphthionic</i> —		
Ref.....	70	— 75
Tech.....	60	— 65
Phthalic..	25	— 27
Picric....	30	— 35
<i>Salicylic</i> —		
Tech.....	35	— ..
<i>Sulphanilic</i>	14½	— 15
<i>Tobras</i> .....	80	— 83
<i>Alpha-</i>		
<i>naphthyl-</i>		
<i>amine</i> ....	32	— 34
<i>Alpha-naphthol</i> ,		
technical	57	— 59
<i>Aniline oil</i> ..	14½	— 16
For. red..	38	— 40
Salt.....	..	— 26
<i>Anthraquinone</i> —		
100%.....	50	— 55
<i>Benzaldehyde</i> —		
Tech.....	60	— 65
<i>Benzidine</i> —		
Base.....	65	— 69
Sulphate .	75	— 80
<i>Benzyl-chloride</i> —		
95-97% ..	30	— 35
Crude....	25	— 30
<i>Beta-naphthol</i> —		
Sub'd.....	55	— 60
Tech.....	22	— 24

<i>Beta-naphthalthmine</i> —		
Sub'd.....	1.25	—1.30
Tech.....	53	— 55
<i>Dianisidine</i> ..	2.35	—2.45
<i>Diethylan-</i>		
<i>iline</i> .....	55	— 60
<i>Dimethylan-</i>		
<i>iline</i> .....	25	— 27
<i>Dinitro-</i>		
<i>benzol</i> ....	15	— 16½
<i>Dinitro-</i>		
<i>toluol</i> ....	16	— 16½
<i>Dinitro-</i>		
<i>phenol</i> ...	23	— 24
<i>Dinitro-chlor-</i>		
<i>benzol</i> ....	13½	— 14
<i>Diphenyla-</i>		
<i>mine</i> .....	34	— 35
<i>Meta-nitro-</i>		
<i>para-tolui-</i>		
<i>dine</i> .....	1.40	—1.45
<i>Meta-nitroani-</i>		
<i>line</i> .....	65	— 69
<i>Meta-phenyl-</i>		
<i>enedia-</i>		
<i>mine</i> .....	80	— 85
<i>Meta-toluy-</i>		
<i>onedia-</i>		
<i>mine</i> .....	65	— 69
<i>Monoethyl-</i>		
<i>aniline</i> ...	90	—1.00
<i>Nitrobenzol</i>	9	— 11
<sup>1</sup> <i>Ortho-amide-</i>		
<i>phenol</i> ...	2.15	—2.25
<i>Ortho-nitro-</i>		
<i>aniline</i> ...	53	— 55

<i>Ortho-nitro-</i>		
<i>phenol</i> ...	86	— 90
<i>Ortho-nitro-</i>		
<i>toluol</i> ....	16	— 17
<i>Ortho-tolui-</i>		
<i>dine</i> .....	20	— 22
<i>Para-ami-</i>		
<i>doacetan-</i>		
<i>ilid</i> .....	85	— 90
<i>Para-amine-</i>		
<i>phenol</i> —		
Base.....	78	— 80
H. Cl.....	1.40	— ..
<i>Para-nitro-</i>		
<i>acetanilid</i>	45	— 50
<i>Para-nitro-</i>		
<i>aniline</i> ...	51	— 55
<i>Para-nitro-</i>		
<i>phenol</i> ...	46	— 47
<i>Para-nitro-</i>		
<i>orthotolui-</i>		
<i>dine</i> .....	2.75	—3.00
<i>Paraphenyl-</i>		
<i>enedia-</i>		
<i>mine</i> .....	1.25	—1.28
<i>Para-tolui-</i>		
<i>dine</i> .....	40	— 42
R. salt....	42	— 43
<i>Resorcin</i> ,		
Tech.....	65	— 80
<i>Schaffer's</i>		
salt.....	48	— 50
<i>Solium-naph-</i>		
<i>thionate</i> ..	52	— 54
<i>Toluidine</i> —		
Base.....	88	— 90
<i>Xylidine</i> ....	36	— 37

<sup>1</sup> In bond.

## DYEING MATERIALS

<i>Annatto</i> —			<i>Gallnuts</i> —			<i>Oak Bark</i> —					
Fine.....	34	—	37	Aleppy...	18	—	19	Red.....	5	—	6
Seed.....	7	—	7½	<sup>1</sup> Chinese	13	—	..	White....	6	—	..
<i>Egg Prod.</i> —				<i>Gambier</i> —				<i>Sumac</i> —			
Albumen				Common	7½	—	8	Ground,			
crystal.	87	—	89	Cubes....	10½	—	10¾	per ton.	43.00	—	..
Yolk, granu-				Plantat'n	8½	—	8½	<i>Turmeric</i> —			
lar.....	47	—	49	<i>Indigo</i> —				Aleppy...	5½	—	6
Spray....	49	—	51	Madras ..	1.25	—	1.30	Madras ..	5½	—	5¾
<i>Cochineal</i> —				<i>Logwood</i> —				<sup>1</sup> <i>Valonia</i> —			
Silver....	46	—	50	Sticks,				Per ton —			
<i>Cutch</i> —				Haitian,				Mixtures	24.00	—	25.00
Borneo...	5	—	6	per ton.	24.00	—	25.00	Beards..	33.00	—	34.00
Rangoon	9½	—	10½	Madder..	22	—	25	<i>Wattle Bark</i> —			
<i>Dextrine</i> — Cwt.				<sup>1</sup> <i>Mangrove Bark</i> —				Per ton —			
White....	3.29	—	3.56	Per ton...	25.00	—	26.00	Chipped.	29.00	—	31.00
Gum.....	3.59	—	3.79	<sup>1</sup> <i>Myrobalans</i> —				<i>Dyewood Extracts</i> —			
Canary...3.34	—	3.44		Per ton, ship —				R Sand's.	16	—	18
<sup>1</sup> Divi-divi, per				J. No. 2..	17.00	—	17.50	Camw'd..	18	—	20
ton....	28.00	—	..	R. No. 2.	16.75	—	17.00				

## EXTRACTS

Flavine,		Fustic —		Quercitron —	
lemon....	1.00 -1.10	Solid ord	5 - 5½	Crystals..	12 - 16
Hematine		Liquid...	5½- 11	Solid.....	9½- 10
crystals ..	9 - 18	Hypernic —		Sumac —	
Logwood —		Crystals..	17 - 28	Liquid...	5 - 11
Liquid...	6 - 9¼	Liquid...	11 - 15	Liquid...	5 - 6
Solid.....	12 - 14	Solid.....	17 - 20	Quebracho —	
Crystals..	12 - 15	Mangrove —		<sup>2</sup> Solid ....	2¼- 2½
Osage		Solid.....	4¼- 6	Liquid...	2.32 - ..
orange....	7 - 7½				

## RUBBER EXCHANGE OF NEW YORK

## No. 1 STANDARD CONTRACT

	High	Low	Closing	
			Mar. 29	Mar. 28
March.....	3.03	3.01	.....	3.00
April.....	.....	.....	<sup>2</sup> 3.05	3.05
May.....	.....	.....	3.10-3.13	3.11
June.....	.....	.....	<sup>2</sup> 3.14	3.16
July.....	.....	.....	3.18-3.22	3.20
August.....	.....	.....	<sup>2</sup> 3.23	3.25
September.....	3.30	3.30	3.28-3.30	3.30
October.....	.....	.....	<sup>2</sup> 3.34	3.37
November.....	.....	.....	<sup>2</sup> 3.40	3.43
December.....	3.53	3.50	3.46-3.50	3.50
1933—				
January.....	.....	.....	<sup>2</sup> 3.55	3.57
February.....	.....	.....	<sup>2</sup> 3.63	3.66
Spot.....	.....	.....	<sup>2</sup> 3.10	3.10

<sup>1</sup> Shipment.<sup>2</sup> Nominal.

NEW "A" CONTRACT

April.....	.....	<sup>1</sup> 3.02	.....	3.02
May.....	.....	<sup>1</sup> 3.07	.....	3.08
June.....	.....	<sup>1</sup> 3.11	.....	3.13
July.....	.....	<sup>1</sup> 3.15	.....	3.17
August.....	.....	<sup>1</sup> 3.20	.....	3.22
September.....	.....	<sup>1</sup> 3.25	.....	3.27
October.....	.....	<sup>1</sup> 3.31	.....	3.34
November.....	.....	<sup>1</sup> 3.37	.....	3.40
December.....	.....	<sup>1</sup> 3.43	.....	3.47
1933 —				
January.....	.....	<sup>1</sup> 3.52	.....	3.54
February.....	.....	<sup>1</sup> 3.60	.....	3.63

**Grading of Cotton.** In order to understand the exchange quotations on cotton, it is necessary to know the terms used in the transactions. The classification of cotton into the standard grades fixed by the Government constitutes an exceedingly difficult art. There is absolutely no mechanical basis, and the classification is a purely relative one. The kind of plant has no bearing whatsoever on the grade, nor has the length or strength of staple. It is really a distinction based upon the condition of the cotton, rather than upon its inherent qualities.

The grade "middling" is the basis upon which the market values of the other grades are quoted. There are eight full grades :

Fair	Low Middling
Middling Fair	Good Ordinary
Good Middling	Ordinary
Middling	Low Ordinary

Between these full grades are the half grades, known as the Stricts. Some classers use quarter grades, with which we shall not concern ourselves here. The grades and half grades are quoted for whites, tinges, and stains. A stain is a heavy discoloration, while a tinge is a lighter hue. Partial discolorations, known as spots, are permissible in the lower grades of whites. The values of the various grades are always quoted as so many points on or off White Middling, a point being  $\frac{1}{100}$ th of a cent. Thus, if Middling White were quoted at 24 cents and Ordinary as 300 points off, it would mean that Ordinary was worth 21 cents. An example is given on the next page of a regular quotation sheet.

<sup>1</sup> Nominal.

<i>U. S. Grades</i>	<i>White</i> <sup>1</sup>	<i>Tinges</i> <sup>2</sup>	<i>Stains</i> <sup>2</sup>
Middling Fair.....	403 on	Nominal	Nominal
Strict Good Middling.....	328 on	49 off a	Nominal
Good Middling.....	253 on	152 off a	447 off a
Strict Middling.....	135 on	300 off a	618 off a
Middling.....	Basis	456 off a	809 off a
St. Low Middling.....	305 off	704 off a	Nominal
Low Middling.....	843 off	1064 off a	Nominal
Strict Good Ordinary.....	1230 off	Nominal	Nominal
Good Ordinary.....	1518 off	Nominal	Nominal

DIFFERENTIALS

The following average differentials between grades of “middling” (unless otherwise stated) are figures from the April 26 quotations of ten markets (on or off Middling) for delivery in this market May 3, 1932:

<i>Grade —</i>	<i>Cents</i>	<i>Grade —</i>	<i>Cents</i>	<i>Grade —</i>	<i>Cents</i>
Mid'l'g fair....	.65 on	Strict low		Light Yellow	
Strict good.....	.52 on	mid.....	.22 off	Stained —	
Good.....	.38 on	Low mid.....	.49 off	Good.....	.39 off
Strict.....	.22 on	Spotted —		<sup>3</sup> Strict.....	.63 off
Middling.....	Basis	Good.....	.22 on	<sup>3</sup> Middling....	.94 off
Strict low.....	.22 off	Strict.....	Even	Yellow Stained —	
Low.....	.49 off	Strict low.....	.49 off	Good.....	.50 off
<sup>3</sup> Strict good		Middling.....	.23 off	<sup>3</sup> Strict.....	.87 off
ordinary.....	.82 off	Low.....	.82 off	<sup>3</sup> Middling....	1.22 off
<sup>3</sup> Good ord.....	1.12 off	Yellow Tinged		Gray Stained —	
<sup>4</sup> Extra White —		Strict good	Even	<sup>3</sup> Good.....	.61 off
Good mid....	.38 on	Good.....	.26 off	Strict.....	.39 off
Strict mid....	.22 on	Strict.....	.39 off	<sup>3</sup> Middling....	1.22 off
Middling....	Even	<sup>3</sup> Middling....	.52 off	Blue Stained —	
		<sup>3</sup> Strict low....	.88 off	<sup>3</sup> Good.....	.58 off
		<sup>3</sup> Low.....	1.24 off	<sup>3</sup> Middling....	1.18 off
				<sup>3</sup> Strict.....	.91 off

It is clear that in this classification the human element plays a great part. The difference between quarter grades, or even half grades, or between a tinge and a stain, is subject to a great variety of interpretations. While there is no definite standard, Middling must be cream or white, must show no soil evidence, no gin-cuts or naps, may have a few pieces of leaf (not powdered), and a few

<sup>1</sup> U. S. Government differences.  
<sup>2</sup> Average of differences on New York, New Orleans, Memphis, and either the Savannah or the Augusta exchanges.  
<sup>3</sup> These grades are not deliverable on future contracts.  
<sup>4</sup> For the last two days extra white good middling should have been .38 on.

motes (immature seeds). As the grades go up the cotton must be freer of impurities, until the top grades have to show practically a perfect lustrous, silky, white, and clear fiber. In the lower grades the impurities increase, until in the Ordinaries we find large and small leaf particles, sticks, hulls, dirt, sand naps, gin-cuts, and spots, together with a dingy color.

It is this classification that governs the trading on all the exchanges, and upon which the planter originally sells his crop. The exceptions are those varieties of cotton that are distinct from the crop as a whole. Sea Islands are sold as Fancy, Choice, Fine, Medium, and Common. Bolly or immature cotton is sold by separate agreements; and Linters, the fibers regained by the seed mills from reginning the seed, are not sold on this basis. Neither is what is known as the "City Crop," — loose cotton accumulated from taking samples — sold in this way.

Aside from grade, there are two other qualifications which are of equal importance to the manufacturer: length and strength. Lengths are quoted in eighths of an inch, and cotton under  $1\frac{1}{8}$ " is termed short, while that over  $1\frac{1}{8}$ " is long. The normal lengths run from  $\frac{3}{4}$ " to  $1\frac{7}{8}$ ", and it is noteworthy that, where a normal difference between grades would be 25 points, the difference of  $\frac{1}{8}$ " would be about 250 points.

Strength — elasticity and tensile strength — is again one of the mill's requirements. The usual buyer's test for fiber vitality is to compress a sample in the hand to see if it will return to its former shape. The importance of length is that it governs the fineness of the yarn to be spun, while grades affect the finish of the cloth. Mills can not buy mixed lots, but must have even running grades of fixed staple.

**Buyers of Raw Cotton.** The small planters of the South are usually unable to finance themselves independently through the growing and picking seasons. Consequently, the local storekeeper, from whom the planters buy their supplies, usually extends credit in the form of an open account and so becomes the first middleman. Not infrequently the storekeeper will accept cotton rather than money in settlement of his accounts, and where he follows this practice he becomes what is known as a local buyer. When he has accumulated sufficient cotton, he sells either to an

intermediate buyer or to the buyer for some merchant or mill. In the case of the larger grower, or the syndicate of growers, the local buyer is usually eliminated. These planters obtain their credit from the large merchant buyers, who in turn are carried by their banks.

Very frequently the local buyers are scattered so thickly through



COTTON — THE SQUARE BALE

a neighborhood, and each accumulates such small and heterogeneous lots of cotton, that an intermediate buyer finds his way into the natural order. Sometimes the intermediate is merely a “scalper” who buys from the local dealer and sells to merchant buyers. In other cases, notably in Texas, he acts as a concentrating agent, buying at local points from growers, and selling, usually at compress points, to representatives of merchants or mills. In the latter case he is referred to as a “street buyer.”

When the grower surrenders his cotton to the local dealer, the latter usually has it ginned, but in cases where the planter is able

to finance himself he takes his cotton to the gin himself, pays for the ginning, and either sells in so-called gin bales (before they are compressed) or, if a warehouse is available at the gin or compress point, holds his cotton until he can obtain a satisfactory price for it. The local banks perform a very important part of the crop financing at this stage, for since the grower sells for cash, the buyers require advances. These are made by the southern banks against buyers' tickets, showing cotton purchased, against gin receipts, warehouse receipts, compress receipts, and finally when the cotton is shipped, against bills of lading.

The large cotton merchants fulfill a very essential function in that they are responsible for the concentration of the raw material and for its redistribution into the proper channels of manufacture. They maintain branches and representatives throughout the entire cotton-growing areas and are directly connected by wire with all the important exchanges. By far the bulk of their buying is done after the close of the New York Exchange. They buy from local and intermediate buyers who during the day have been acquiring mixed lots of all sorts. The merchant's representative, known as the "take-up" man, goes over and classifies the cotton accumulated by the local buyers, takes from each bale a sample which he tags with a duplicate of the shipping tag he places on the bale itself, and then ships the cotton to the concentration point and the samples to the office at that place. He pays the local buyer by draft or check.

The office at the concentration point, usually located where there is a compress, has in the meantime received instructions from the head office as to how to make up the various lots. As the bales are compressed they are collected into even-running lots of certain grades for which the head office has received inquiries from mills, and are shipped out in this way. The branch office will ship according to instructions, forwarding the bills of lading with invoices and sight drafts to the head office or to some bank.

Since the World War, the coöperative movement has in some sections developed to such an extent as to supplant in large part the old system of marketing. In Texas, Georgia, and other States, a large part of the crop is now concentrated, financed,

and sold through these extensive organizations of growers, either directly to mills or to large merchants and exporters.

Almost all cotton is bought on Middling basis, but some is taken on sample with guarantees (often a dangerous practice for both parties), and some is taken at a fixed price per bale.

A few southern mills buy direct from near-by growers, but the great majority and practically all the northern mills obtain their cotton through merchants, or through brokers representing southern merchants.

We have seen briefly how the cotton is grown and brought to market, but we have still to consider the all-important question of what determines the price at which it changes hands.

**Trading on the Cotton Exchange.** In order to explain in detail the workings of the cotton exchange it may be necessary to review information in an early part of the book. The traders or speculators on the cotton exchange make a thorough study of crop and market conditions and can determine in advance, long before the consumer and the producer are able to, the true situation and prospective changes in the market supply and demand. As a result they discount the future, and the market becomes steadier and changes more gradual because of their activities.

To illustrate: A speculator with advance information about raw cotton can anticipate future conditions, and if conditions are not favorable for a rising market (if the supply is more than the demand), he sells and the price gradually falls and consumption increases. If the speculator had not exercised his judgment in buying the cotton, it would have continued to sell at the same lower or higher prices until the new conditions prevailed, when the price would suddenly jump higher or drop lower, causing much harm and distress both to the producer who had sold the cotton and to the consumer who had bought it. One can naturally see that the price change would be greater than under speculation, because the supply would not have been reduced or conserved during the preceding time. In other words, speculation wisely done and based upon sound judgment tends to conserve the supply of cotton before a shortage is noticed, and to accelerate the consumption before an over-supply occurs, and in this way prevents sudden fluctuation of prices.

The speculator attempts to secure information not known to the general public, and buys or sells commodities, such as raw cotton, to make a profit. If he feels that there will be a scarcity or great demand for cotton, he will buy and then sell at a profit when the demand or scarcity becomes known. On the other hand, if he feels that there will be an excess, or low demand for cotton, he will sell, knowing that he can buy back later at a lower price.

Sometimes speculators buy or sell according to their feelings, which may or may not be later supported by facts. Such speculators are called gamblers because they take chances on making a profit instead of trading on the basis of sound information. For example, the traders who believe that the prices of cotton are too low, will naturally buy, and are called *bulls*. On the other hand, if another group of traders feel that the prices are too high and not warranted by conditions, they will sell; they are called *bears*. Of course, a trader may change his opinion — in the same day be a bear on cotton in the morning and a bull in the afternoon.

If, on the other hand, the speculator receives information from some reliable firm or agency in the South that the cotton crop is to be exceedingly large, without a corresponding demand, then he immediately becomes a bear on cotton and sells at the present market. When the bearish action on cotton takes place, the price falls and consumption will increase.

The textile industry, as well as the members of society, can not stand sudden rises or drops in prices, which cause much damage. Therefore, the professional trader in cotton earns his profits if his judgment is good in speculation. We must bear in mind, however, that speculation without judgment or knowledge is mere gambling, and very harmful to the trade and to society. The board of governors of the cotton exchange and other exchanges are familiar with the effects of gambling and unsound speculation, and have tried to restrain it as much as possible.

In order to trade on the cotton exchange, or on any other exchange, a trader must become a member by paying a large sum for a seat, or the privilege of buying and selling cotton. It is not uncommon for a group of members with outside influence to buy all the available supply of cotton or other commodity and then attempt to dictate the price to the consumer. This is called

“cornering the market” and is considered a bad practice, unethical, and punishable by law because the group is attempting to secure a monopoly on one commodity, such as cotton, and to dispose of it at an unreasonable price.

Another practice, called “wash sales,” is the action of a group of members in selling cotton through one broker and buying through another, thus creating a feeling of activity of the stock and increasing the sales by artificial means.

*Arbitrage* consists of buying and selling the same commodity, such as cotton, in two different markets, in order to profit by the difference in price. For example, raw cotton may be selling in two exchanges or markets at different prices. Note the quotation of cotton in the different markets on the same day.

## LIVERPOOL COTTON MARKET

	Open	High	Low	Close	Prev. close
April.....	.....	.....	.....	4.66	4.74 <sup>1</sup>
May.....	4.66	4.67	4.65	4.66	4.71
June.....	.....	.....	.....	4.63	4.68
July.....	4.64	4.65	4.63	4.63	4.68
August.....	.....	.....	.....	4.64	4.68
September.....	.....	.....	.....	4.65	4.69
October.....	4.66	4.67	4.65	4.66	4.70
November.....	.....	.....	.....	4.67	4.71
December.....	.....	.....	.....	4.70	4.74
1933 —					
January.....	4.70	4.72	4.70	4.71	4.75
February.....	.....	.....	.....	4.73	4.78
March.....	.....	.....	.....	4.76	4.80
April.....	.....	.....	.....	4.78	4.82

## NEW ORLEANS MARKET

	Open	High	Low	Close	Prev. close
May.....	5.95	6.04	5.95	<sup>2</sup> 6.08	5.99
July.....	6.14	6.25	6.13	6.24	6.17
October.....	6.36	6.48	6.36	6.47	6.39
December.....	6.51	6.63	6.51	6.63	6.55
1933 —					
January.....	6.64	6.64	6.64	<sup>2</sup> 6.71	6.63
March.....	6.80	6.85	6.80	6.84	6.78

<sup>1</sup> These prices are in pennies — 4.66d.

<sup>2</sup> Bid.

CHICAGO MARKET

	Open	High	Low	Close	Prev. close
May.....	6.06	6.17	6.10	6.17	6.11
July.....	6.24	6.34	6.24	6.34	6.29
October.....	6.46	6.57	6.46	6.56	6.50
December.....	6.61	6.73	6.61	6.73	6.67
1933 —					
January.....	6.69	6.77	6.69	6.77	6.77
March.....	6.88	6.95	6.88	6.95	6.90

BREMEN AND HAVRE FUTURES

At Bremen May American futures opened at 7.06¢, closed at 7.08¢, 2 off; July opened at 7.20¢, closed at 7.23¢, unchanged; and October opened at 7.31¢, closed at 7.34¢, 1 off.

Havre May futures opened at 2.12 f, closed at 2.13 f, 1 off; July opened and closed at 2.17 f, 1 off; and October at 2.20 f, 1 off.

EGYPTIAN COTTON MARKETS

Sakels, May, at Alexandria, closed at 11.59¢, 19 off; July, 12.10¢, 11 off; November, 13.09¢, 19 off; January, 13.36¢, 17 off. Ashmouni, June, ended at 9.99¢, 6 off; August, 10.07¢, 6 off; October, 10.32¢, 8 off; December, 10.47¢, 8 off.

At Liverpool Sakels, May, at noon and close were 6.42 d, 5 off, and July 6.58 d, 4 off. Ashmouni, May, at noon was 5.71 d, at closing 5.73 d, 2 off, and July at noon 5.79 d, at closing 5.81 d, 2 off.

EAST INDIAN COTTON

No. 1 Oomra fine Indian spot cotton at Liverpool was 4.52 d, 6 points off, yesterday.

Broach, April-May, at Bombay was cabled at 183 rupees, 3 rupees lower, and July-August at 190 rupees, 2 off. Bengal, July, was 157 rupees, 1 off.

The following tabulations from the *Journal of Commerce* show how information about weather conditions and the state of the cotton crop is furnished to traders each day during the season :

COTTON STATES WEATHER

For Tennessee — Cloudy, followed by showers in central and west portions, slightly cooler in extreme west portion, Saturday; Sunday showers and cooler.

For Virginia — Partly cloudy Saturday; Sunday increasing cloudiness, possibly followed by showers in extreme west portion; not much change in temperature.

For North Carolina — Partly cloudy Saturday; Sunday increasing cloudiness, possibly followed by showers in extreme west portion; not much change in temperature.

For South Carolina — Partly cloudy Saturday; Sunday increasing cloudiness, probably followed by showers.

For Georgia — Partly cloudy Saturday; Sunday increasing cloudiness, probably followed by showers.

For Florida — Partly cloudy Saturday and Sunday.

For Extreme Northwest Florida — Partly cloudy Saturday; Sunday cloudy, scattered thundershowers; moderate to fresh southerly winds.

For Louisiana — Partly cloudy and cloudy, with scattered thundershowers, Saturday and probably Sunday; moderate to fresh southerly winds on the coast.

For Mississippi — Partly cloudy and cloudy, with scattered thundershowers, Saturday and probably Sunday; moderate to fresh southerly winds on the coast.

For Alabama — Partly cloudy to cloudy, thundershowers in west portion, Saturday; Sunday cloudy, with thundershowers; moderate to fresh southerly winds on the coast.

For Arkansas — Cloudy, with scattered thundershowers, Saturday and Sunday; colder in northeast portion Saturday.

For Oklahoma — Cloudy, with occasional rains, and colder Saturday; Sunday partly cloudy to cloudy.

For East Texas — Cloudy, with local thundershowers, cooler in northwest portion, Saturday; Sunday partly cloudy to cloudy; moderate to fresh southerly winds on the coast.

For West Texas — Partly cloudy, colder in north and east portions, Saturday; Sunday partly cloudy.

## CROP OUTLOOK

### *Daily Weather*

Official weather reports for twenty-four hours ended yesterday morning follow:

Houston, first district — Rainfall 2 stations, .02 to .10 inch; maximum temperatures, 72 to 90; minimum, 58 to 68; cloudy 19 stations, partly cloudy 4, raining 1.

Houston, second — Rainfall 3 stations, .01 to .02; maximum, 72 to 90; minimum, 66 to 72; cloudy 28, partly cloudy 1, raining 3.

Houston, third — Rainfall 8 stations, .02 to .06; maximum, 78 to 88; minimum, 66 to 76; cloudy 15, raining 2.

Oklahoma, first — No rainfall; maximum, 78 to 85; minimum, 65 to 68; cloudy 21, partly cloudy 1.

Oklahoma, second — Rainfall 1 station, .01; maximum, 76 to 87; minimum, 60 to 68; cloudy 18, partly cloudy 3.

Little Rock, first — No rainfall; maximum, 84 to 90; minimum, 58 to 68; cloudy 11, partly cloudy 4.

Little Rock, second — No rainfall; maximum, 82 to 89; minimum, 58 to 61; cloudy 2, partly cloudy 1.

New Orleans district — No rainfall; maximum, 84 to 91; minimum, 60 to 66; cloudy 12, foggy 2.

Vicksburg district — No rainfall; maximum, 84 to 91; minimum, 58 to 66; cloudy 5.

Montgomery district — Rainfall 4 stations, .04 to .18; maximum, 82 to 91; minimum, 55 to 62; partly cloudy 2.

Memphis district — Rainfall 5 stations, .21 to .60; maximum, 66 to 92; minimum, 53 to 64; cloudy 7, partly cloudy 2.

Savannah district — Rainfall 3 stations, .05 to .20; maximum, 78 to 88; minimum, 57 to 62; cloudy 9, partly cloudy 5.

Atlanta district — Rainfall 9 stations, .04 to .54; maximum, 79 to 88; minimum, 51 to 62; cloudy 5, foggy 1.

Augusta district — Rainfall 4 stations, .01 to .02; maximum, 78 to 85; minimum, 51 to 60; clear.

Charleston district — Rainfall 2 stations, .01 to .03; maximum, 75 to 82; minimum, 52 to 62; cloudy 1, partly cloudy 1, raining 1.

Wilmington district — Rainfall 1 station, .06; maximum, 73 to 81; minimum, 37 to 54; clear.

The map on page 316 is a part of a regular weekly cotton crop and spot market service that appears in newspapers and is especially designed to show in convenient graphic form pertinent weather conditions in each of the important unit-producing districts throughout the entire cotton belt. The abbreviations used in the boxes, in order listed, are as follows:

*Rain* — Actual average rainfall in inches at the stations indicated during the periods mentioned.

*Normal* — Normal rainfall averaged for the same stations for the same periods.

*High* — The highest temperature recorded by any of the stations indicated during the periods mentioned.

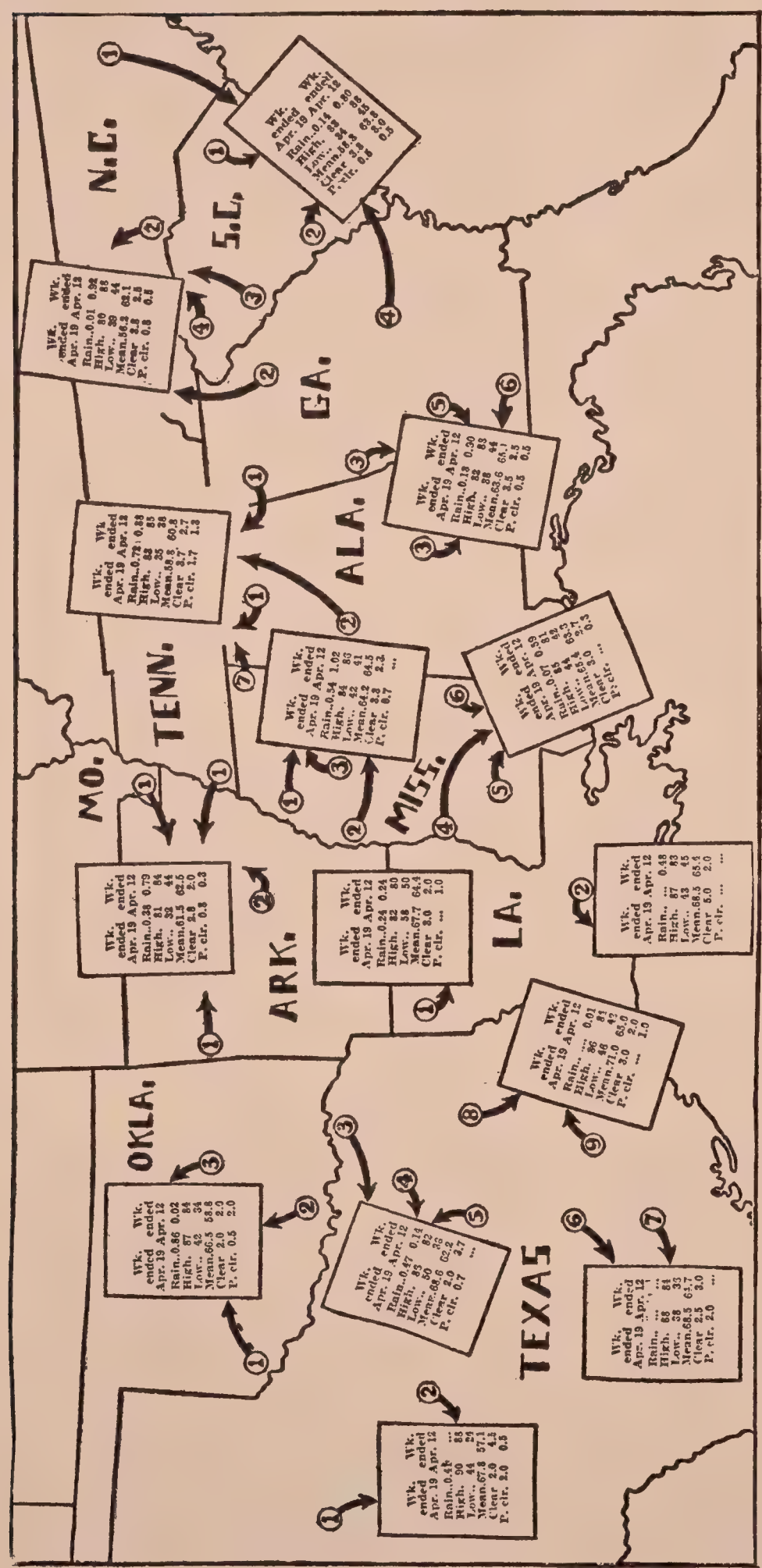
*Low* — Lowest temperatures recorded by any of the stations indicated during periods mentioned.

*Mean* — Average of the actual daily highs and lows for the stations and the periods mentioned.

*Normal* — Normal means temperature for the stations and the periods indicated.

*Clear* — Average number of days during specified period on which it was clear at eight o'clock in the morning at the stations indicated.

*P. Clear* — Average number of days during specified period on which it was partly clear at eight o'clock in the morning at the stations indicated.



WEEKLY COTTON WEATHER MAP

List of STATIONS — Following is a list of the weather stations shown on the accompanying weekly weather map. The stations are grouped by States and numbered to correspond to key numbers on the map: *Texas* — (1) Lubbock, (2) Albany, (3) Paris, (4) Dallas, (5) Waco, (6) Temple, (7) San Marcos, (8) Long Lake,

(9) Brenham. *Oklahoma* — (1) Man- gum, (2) Atoka, (3) Okmulgee. *Ar- kansas* — (1) Fort Smith, (2) Little Rock. *Missouri* — (1) Caruthersville. *Tennessee* — (1) Memphis. *Louisiana* — (1) Shreveport, (2) La Fayette. *Mississippi* — (1) Clarksdale, (2) Green- ville, (3) Kosciusko, (4) Vicksburg, (5) Brookhaven, (6) Meridian, (7) Holly

Springs. *Alabama* — (1) Florence, (2) Tuscaloosa, (3) Montgomery. *Georgia* — (1) Rome, (2) Athens, (3) West Point, (4) Dublin, (5) Amer- icus, (6) Thomasville. *South Carolina* — (1) Florence, (2) Blackville, (3) Greenwood, (4) Greenville. *North Carolina* — (1) Goldsboro, (2) Char- lotte.

**Future Cotton.** With the gradual increase in commerce due to the rapid means of communication — telephone, telegraph, etc., — a new system of buying and selling cotton has developed, by which it is possible for a person to buy or sell upon a determined basis of quality to meet his future requirements. In fact, it became possible to buy or sell cotton twelve months in advance, even before the cotton was planted.

To illustrate: If a mill man receives a contract to supply cotton sheeting for the next year or more, it becomes necessary for him to know definitely before he signs the contract what the raw cotton will cost him a year in advance. Therefore, before the cotton is grown and before he has the money to buy the cotton, he can agree to supply the cotton sheeting at a definite price and protect himself in signing the contract by contracting for cotton to be delivered in the future.

The cotton bought in this manner is called *future cotton*. In a similar manner, silk, wool top, etc., may be bought on a future basis.

Thus we see that cotton trading on the exchange falls roughly into two categories: trading in cotton for immediate delivery, or spot cotton; and buying or selling for delivery at some future time, or future cotton. Purchases or sales of spot cotton mean that cotton actually will be delivered from vendor to purchaser; but, as we shall see, trading in futures does not necessarily mean that the contract will be fulfilled by delivery. The great cotton markets are New York, Liverpool, New Orleans, Bremen, and Havre. Of these, New York is almost entirely a futures market, while New Orleans is chiefly a spot market. Liverpool, Bremen, and Havre trade in both spot and futures, but Liverpool is the European center for trading in future contracts. See cotton quotations from world centers.

Only about 2 per cent of the annual crop is sold spot in New York, and yet it is the price on the New York Cotton Exchange which governs very largely the price paid to the grower in the South by the various buyers. The New York Exchange is the barometer of the American and, to a large extent, of the world's cotton trade, because its mechanism works out the equilibrium between demand and supply. This

mechanism consists chiefly of the trading device called the "hedge."

Hedging is an insurance against fluctuations in cotton prices by purchase or sale of future contracts for cotton, against sale or



TRADING FLOOR OF THE NEW YORK COTTON EXCHANGE

purchase made for actual delivery. It consists of nothing more than neutralizing the gain or loss which will result from existing contracts if the price rises or falls before delivery date, by creating an off-setting loss or gain.

Assume, for instance, that a merchant makes a contract with a mill in July for 100 bales of cotton for October delivery. He sells at the current price of, let us say, 30 cents per pound, plus his overhead and profit. In due course he will obtain his cotton from the South, but in the meantime he covers, or hedges his contract, by buying 100 bales of October futures on the Exchange. If he has to pay the grower 31 cents for the cotton which he has sold to the mill for 30 cents, he will, on the other hand, be able to sell his future contract, which he bought at 30 cents, for 31 cents. The loss on one is neutralized by the gain on the other. *Vice versa*, he will lose whatever *extra* profit he might have made from a falling price.

In the same way, a manufacturer may buy futures against orders he has accepted for goods at prices based on the price he expects to pay for his cotton. Or he may sell futures to protect himself on cotton he has bought but has not yet covered by cloth contracts. Hedging by manufacturers, however, particularly in the North, is not a common practice, because the cloth market is not elastic enough to follow accurately in the wake of cotton prices, and also because the mill treasurer rarely wants to hedge cotton in his warehouse, preferring to rely on his own judgment in matters of purchase.

Occasionally a grower may find it to his advantage to hedge his crop. If, for example, he is satisfied in August that the present price for December cotton is likely to be higher than he will obtain later, he may sell December futures for a conservative percentage of his crop, thereby guaranteeing himself against a drop.

By far the greatest part of the future trading, however, is done by merchants, because they are actually engaged in the business of selling cotton they have not yet acquired, or of carrying cotton for which they have no selling contracts. Speculation, of course, enters into the dealings on the exchanges as an important economic factor. In normal times it tends to stabilize the market by discounting future trends, but in periods of extraordinary demand or supply it causes violent fluctuations in prices. At such times there is always a good deal of agitation for preventive legislation, but it is unlikely that dealing in futures will ever be prohibited by law. The present regulations of the large exchanges eliminate abuse as far as possible, and the futures markets are really a factor of safety for the entire industry.



NEW YORK COTTON EXCHANGE  
BUILDING

All the large merchants, as we have seen, have branch offices in the South ; and all these offices have wire connections with the chief markets. On the basis of the Liverpool quotations (there is five hours *difference in time*) and the New York opening prices, the head offices will send out to their branches and representatives their daily limits, above which they are instructed not to buy. Inasmuch as most of the small growers are dependent upon the buyers for their news of the markets, they are at somewhat of a disadvantage, but the keenness of competition prevents their exploitation by unscrupulous buyers.

A contract on the New York Cotton Exchange calling for the delivery of 100 bales specifies Middling grade, but the seller may deliver any grades which are tenderable by the Exchange regulations. These grades are from Strict Low, Middling, to Middling Fair, but if tinged, not below Middling Tinged. Stains are not tenderable. The grades are determined and settlement is made on the basis of so many points on or off Middling, which, as we have seen, is the basis for all quotations.

It is evident that mills requiring certain even-running grades could never buy their cotton on the Middling basis. For this reason, except in the few cases where they buy directly from the growers, mills purchase their requirements from dealers on the basis of samples. Selling to mills, as opposed to selling M/B (Middling Basis), is known as selling on merit. Mills usually begin to buy in September and fill about 60 per cent of their year's requirements by January. Those manufacturers who use the high grades usually buy earliest, because of the limited crop from which they must obtain their share. Cotton is ordinarily shipped soon after purchase, and stored, not by the merchant, but at the mill. The recent growth of southern warehouse companies, however, has caused mills to carry less cotton than formerly. Mills ordinarily pay for their cotton in three days.

**Marketing of Cotton Yarn and Cotton Cloth.** The textile mills receive raw cotton and convert it into yarn or cloth. If a mill deals with yarn only, it is called a yarn mill, but if it weaves the cloth, it is called a cloth mill.

Cotton yarn quotations are published every day in the trade papers.

COTTON YARN QUOTATIONS

<sup>1</sup> Carded (Average Quality)

Double carded weav'g and knitt'g yarn 2¢ to 4¢ higher, according to quality  
Single Skeins or Tubes (Warp Twist)

4s to 8s.....	— —30½	20s.....	34 —34½
10s.....	— —31	24s.....	— —36
12s.....	— —31½	26s.....	— —37
14s.....	— —32	30s.....	38 —38½
16s.....	— —33	40s.....	46 —47

Two-Ply Skeins and Tubes

8s-2.....	— —31½	26s-2.....	37½ —38
10s-2.....	31½ —32	30s-2.....	— —38½
12s-2.....	32½ —33	36s-2.....	— —45
14s-2.....	33 —33½	40s-2.....	— —47
16s-2.....	— —34	40s-2 High Breakage.....	— —52
20s-2.....	— —35	50s-2.....	56 —57
24s-2.....	36½ —37	60s-2.....	— —63

Single Warps

10s.....	31½ —32	24s.....	— —37
12s.....	32½ —33	26s.....	— —38
14s.....	33 —33½	30s.....	— —40
16s.....	33½ —34	40s.....	47 —48
20s.....	34½ —35		

Two-Ply Warps

8s-2.....	31½ —32	24s-2.....	37 —37½
10s-2.....	— —32½	26s-2.....	— —38
12s-2.....	33 —33½	30s-2.....	39 —39½
14s-2.....	33½ —34	40s-2 ordinary.....	47 —48
16s-2.....	34 —34½	50s-2.....	— —57
20s-2.....	35½ —36	60s-2.....	63 —64

8s-3- and 4-ply skeins and tubes; tinged, 29, white, 31

Hosiery Cones (Frame Spun)

8s.....	— —30	22s.....	— —34
10s.....	30½ —31	24s.....	34½ —35
12s.....	31 —31½	26s.....	35½ —36
14s.....	31½ —32	30s tying in.....	— —37
16s.....	32 —32½	30s regular.....	38 —39
18s.....	32½ —33	30s extra quality.....	39 —40
20s.....	33 —33½	40s.....	46 —47

Combed Peeler (Average Quality)

Warps, Skeins, and Cones

20s-2.....	45 —46	50s-2.....	56 —58
30s-2.....	48 —50	60s-2.....	63 —66
36s-2.....	50 —52	70s-2.....	73 —76
40s-2.....	52 —54	80s-2.....	84 —87

<sup>1</sup> See author's trade edition of *Textiles* for explanation in detail of terms.

Singles

12s.....	39	—39½	30s.....	47	—48
14s.....	39½	—40	38s.....	52	—54
16s.....	40	—40½	40s.....	53	—55
18s.....	40	—41	50s.....	57	—59
20s.....	41	—42	60s.....	63	—65
24s.....	44	—44½	70s.....	72	—75
28s.....	46	—46½	80s.....	84	—87

Mercerized Cones (Combed, Ungassed)

26s-2.....	60	—61	80s-2.....	1 06	—1 08
30s-2.....	61	—62	Singles		
36s-2.....	64	—65	30s.....	—	—80
40s-2.....	66	—67	40s.....	—	—85
45s-2.....	71	—73	50s.....	—	—90
50s-2.....	73	—75	60s.....	—	—1 03
60s-2.....	82	—84	70s.....	—	—1 17
70s-2.....	94	—96	80s.....	—	—1 48

Peeler — (Super Quality)

Single Cones

	Carded	Combed		Carded	Combed
10s.....	34 —35	44 —45	26s.....	39 —40	50 —52
14s.....	35 —36	45 —46	30s.....	40 —42	52 —54
16s.....	35½—36½	46 —47	36s.....	45 —46	55 —57
18s.....	36 —37	47 —48	40s.....	48 —50	58 —60
20s.....	36½—37½	48 —49	50s.....	— —	60 —62
24s.....	38 —39	49 —50	60s.....	— —	70 —75

Combed Cones, Warps, and Tubes

20s-2.....	48	—50	40s-2.....	58	—60
24s-2.....	50	—52	50s-2.....	65	—67
28s-2.....	51	—53	60s-2.....	70	—72
30s-2.....	52	—54	70s-2.....	80	—85
36s-2.....	55	—57	80s-2.....	95	—1 00

Combed Reverse Twist Thread Yarns — Skeins, Tubes or Cones, 2-, 3-, and 4-ply

Peeler					Sakelarides	
	Average		Best		Average	Best
24s.....—	—55	57	62	—63	91	96
30s.....—	—58	60	64	—65	94	99
36s.....—	—60	62	66	—67	96	1 00
40s.....—	—65	67	71	—72	1 01	1 06
45s.....—	—70	72	76	—77	1 06	1 11
50s.....—	—75	77	81	—82	1 11	1 16
60s.....—	—85	87	91	—92	1 21	1 27

Quotations are average prices of the counts and qualities indicated at the close of business.

The same is true as regards staple or standard cotton cloths.  
For example :

QUOTATIONS OF STANDARD CONSTRUCTION

March 30, 1932

COARSE YARN GRAY GOODS

Combed Broadcloths

Plain Wide Print Cloth				Count	Width	Weight	Price
Count	Width	Weight	Price	136 × 60	37	4.20-4.25	8½-8¾
96 × 100	39	4.15	15	128 × 68	37	4.20-4.40	8-8½
96 × 100	39	5.00	12½	144 × 76	37	4.25-4.40	9
96 × 92	39	5.25	11¾	144 × 76	37	100-2-ply	22-23
80 × 88	39	5.00	7¼	108 × 60	37	2 × 1	14½
80 × 80	39	4.00	5½				
72 × 76	39	4.25	5¼				
68 × 72	39	4.75	4½				
64 × 60	38½	5.35	3¾-3⅞	88 × 40	37	3.40 2 × 1	12½-13¼
64 × 56	38½	5.50	3	102 × 48	37	3.40 2 × 1	13½-14½
60 × 48	38½	6.25	3⅝-3⅞				
56 × 44	39	6.60	3⅞				
48 × 48	38½	7.15	3				
52 × 40	38½	7.30	3				
4 × 40	38½	8.20	2⅞-2⅝				
40 × 32	40	9.20	2⅞				
40 × 28	39	9.80	2¼				
64 × 60	40	5.15	4⅞				
56 × 56	40	6.00	3¼				
56 × 52	40	6.25	3¼				
64 × 60	45	4.65	4¾-5				
56 × 48	43	5.85	3⅞				
48 × 48	44	6.40	3⅞				
44 × 40	44	7.25	3				
68 × 72	36	5.15	4¼				
64 × 60	36	5.75	3½				
60 × 48	36	6.70	3½				

Poplins

Sheetings

Plain Narrow Print Cloth

64 × 60	28	7.30	3	48 × 52	36	4.70	3½-3⅝
56 × 44	25	10.55	2¼	48 × 48	31	5.00	3-3⅞
64 × 60	27	7.60	2⅞	40 × 40	32	6.25	2¼
52 × 44	25	11.00	2	48 × 48	36	5.00	3⅞
44 × 44	27	9.50	2¼	48 × 40	36	5.50	3⅞
40 × 32	25	14.75	1⅞	44 × 40	36	6.15	3
64 × 60	32	6.50	3¼	40 × 40	36	6.15	2⅞
56 × 52	31½	7.50	2⅞	48 × 48	36	3.00	4¾
48 × 48	31½	8.70	2⅞	48 × 44	36	3.25	4⅝
				64 × 68	36	3.50	4⅞
				44 × 40	37	3.50	4⅞
				48 × 48	37	4.00	4⅞
				56 × 60	36	4.00	4¼
				56 × 56	36	4.25	4
				40 × 36	36	6.50	2⅝
				40 × 38	36	3.90	3⅞
				48 × 48	40	2.50	5⅝
				48 × 48	40	2.85	5-5⅝
				64 × 68	40	3.15	5⅝-5⅞
				56 × 60	40	3.60	4¾
				56 × 56	40	4.00	4¼
				48 × 44	40	3.75	4⅞
				44 × 40	40	4.25	3⅝
				44 × 44	40	5.00	3⅝
				44 × 40	40	5.50	3⅞

Tobacco Cloths (36-in.)

(Special put-ups ⅓¢ to ⅓¢ higher.)

Pajama Checks

64 × 60	36	5.75	4-4½	Count	Wght.	Pr.	Count	Wght.	Pr.
72 × 80	36½	4.70	4⅝-4⅞	48 × 44	7.75	2¾	32 × 28	14.00	1⅞
88 × 88	36½	4.00	5½	44 × 44	8.10	2⅞	28 × 24	15.00	1⅞
				44 × 40	8.50	2¾	26 × 22	16.00	1⅞
				40 × 40	9.20	2⅞	24 × 20	17.00	1⅞
				44 × 36	9.30	2⅞	22 × 18	19.00	1¼
				44 × 36	9.65	2⅞	20 × 16	21.00	1⅞
				36 × 32	11.00	2⅞	20 × 12	23.00	1

Carded Broadcloths

80 × 56	36½	5.10	4½						
80 × 60	38½	5.00	4¼						
80 × 60	37½	4.75	4⅝						
90 × 60	38	4.32	5	30	2.50	5¾	37	2.35	5¾-5⅞
100 × 60	37	4.10	5¼	30	2.85	4⅞	37	2.75	5⅞-c5
112 × 60	37	3.85	5⅞	30	3.00	4⅞	37	3.00	4¾
116 × 60	37	4.10	5⅞	30	3.25	4¼-4⅞	37	3.25	4⅞
128 × 68	37	4.25	8	30	4.00	4⅞	37	3.50	4½
				34	4.75	3½	37	3.95	4

Drills



A few very large mills maintain selling offices of their own in the large centers of marketing, through which they market their goods direct to the jobbers and retailers. In most cases where direct selling is done, however, the goods are sold in the gray by the mill treasurer at the mill. This practice is common with those mills that make staple gray goods and, when not sold ahead, are able to manufacture for stock against spot sales. A few southern yarn mills also sell direct.

The relation between the manufacturer and commercial banker or commission house is as old as the industry itself. Slater's first mill in 1790 was financed by Almy & Brown of Boston, who undertook to market his goods and also to furnish him the credit he needed to buy cotton and supplies. In the early days the cloth was sold at auction by the selling house, and the proceeds, less commission, credited to the mill. Later the factors developed extensive selling organizations throughout the country, by means of which they were able to market the products of many mills.

The marketing of fancy goods requires a great deal of skill. The fall and spring lines to be manufactured by the mills are sent out to the trade by the selling house about six months ahead, and orders are taken before manufacture begins, so as to be sure that the line will "take." Of course there is always the danger of cancellations even then, for which the selling house must bear most of the responsibility.

In addition to marketing the goods and guaranteeing the accounts, the commission house renders financial assistance either by advancing on the mill's product or by indorsing its notes. In return it receives the sole agency for the mill's products, interest on the money advanced, and a commission. The latter varies with the amount of financial assistance required by the mill and the desirability of the risk.

As a general rule the southern mills, because of their distance from the chief markets in New York, Boston, and Philadelphia, are more dependent upon their selling agents than are the New England manufacturers.

In New England a great number of manufacturers are amply able to finance themselves, and could, if necessary, sell their own products. However, stock ownership and old ties have frequently

kept up the relationship with the selling house after its usefulness has been partly outworn. Nevertheless in the selling of fancy goods, even where the mill is supplied with plenty of capital, the commission house fulfills a very necessary function.

Gray goods are very often sold either by a mill or a selling house through the medium of a cloth broker. The latter is strictly a middleman in that he does nothing but bring together the prospective purchaser and seller. In the event of sale, he gets a commission of  $\frac{1}{2}$  per cent, which he often more than earns by his efforts. These brokers are in touch with all the mills, converters, and consumers.

While there are some independent finishing establishments, most of them operate on a commission basis for merchant converters. The latter are a class of merchants of comparatively recent origin, having first appeared about 1880, since which time they have practically taken control of the finishing industry. They buy gray goods either directly from the mill or through a broker or selling house, and have them finished according to whatever they think the requirements of the market are. Inasmuch as they pay on short credit and carry the goods during conversion, frequently selling on several months' credit to jobbers and retailers, they perform an important part of the financing of the cloth. Their recent rapid rise has been due largely to the growing demand for a multiplicity of seasonal designs. Many large mills act as their own converters.

Some large cutters-up and a few big mail-order houses do their own finishing or have it done. As a rule they buy from converters and sell to the jobber, retailer, or consumer.

**The Wool Market.** The buying and selling of wool differs in some respects from that of cotton. There is no exchange for the organized buying and selling of raw wool. Years ago an attempt was made to create such an exchange in New York, but it did not survive long. In order to understand the marketing of wool, it is necessary to know something of the industry and the technical terms and processes. Some idea of the scope of the wool business may be gathered from the following facts.

There are 800,000 farmers raising sheep in this country, some of them in every State. At the beginning of 1932 there were

36,000,000 sheep in the United States, valued at \$4.80 a head, or in the aggregate at \$172,800,000. It is expected that the returns from the wool clip in a fairly good year will pay all a sheepman's running expenses, such as hire of herders, costs of shearing, etc. He then has the sale of his lambs as clear profit. Enormous fortunes are being made in the sheep business in the West, owing to the high price of wool and mutton.

In the last four years the number of sheep has declined 25 per cent, and their value has declined 70 per cent. The decrease in the production of wool in this country in the last 30 years has been 20 per cent, while the population of the nation has greatly increased.

Sheep raising is principally carried on at the borderlines of civilization. As civilized life encroaches upon the pasture lands, the flocks are driven gradually farther and farther into hitherto uninhabited regions. The population of the world is steadily increasing, and the available grazing acres are constantly being reduced as the world becomes more thickly populated. Also, as the population increases, the demand for clothing and food increases, so that, on the face of it, it would seem that the production of wool would decrease while the demand grew constantly larger. In a measure this is true; but there are several factors which tend to arrest this Malthusian specter. In the first place, there are still vast areas of desert land which can be reclaimed for grazing purposes. In the second place, the growing of wool in most countries is as yet practiced on a very crude and consequently uneconomical scale. And, finally, the use of shoddy and wool regained from rags has only begun to be developed. Nor is it true that sheep must necessarily be raised in uncultivated regions; England, with her closely settled soil, supports about three-fifths as many sheep as the United States, on an area of only 121,377 square miles, as against the 3,026,789 square miles in this country.

**Methods of Selling Wool.** Roughly speaking, there are seven ways in which the wool grower may dispose of his fleece wool:

1. He may sell it to buyers representing merchants. The merchant, while he is a middleman, performs a variety of very essential services. At the time of the clip he sends his buyers to the wool-producing centers and buys the clip for cash. He then ships it

to his warehouse, grades it, and sells to the mills on credit. Obviously he finances a very important part of the production, and is furthermore essential because he knows the demand, which the wool-grower does not, and the supply, of which the mill is usually ignorant.

2. The wool grower may also sell to buyers representing mills. He prefers to do this because he eliminates the merchant's profit,



WOOL MARKET AT BUENOS AIRES

but as a matter of fact, there are very few mills large enough to stand the buying expense, and even fewer that can afford to buy their whole season's supply of raw material at one time and for cash. Also, most mills can use only certain grades of wool.

3. If the grower thinks that he is not receiving fair offers from the visiting buyers, he will frequently consign his wool to a merchant to be sold on commission for his account. In this case he may or may not get a better price, but the selling costs him his carrying charges plus the commission of the merchant. There are some wool houses that make a specialty of executing commission sales of this nature.

4. Some wool is sold direct to near-by mills. This is done particularly in Ohio, where many of the smaller mills obtain their entire requirements in this manner.

5. Wool growers sometimes sell to local dealers. This practice is particularly prevalent in regions where the individual grower's production is small. In most eastern states there are a great

number of farmers who grow a small amount of wool. The local dealers are in many cases also the general storekeepers. Since they are the farmer's creditor on other merchandise, and since the average farmer knows very little about the grades of wool, these dealers frequently make a handsome profit when they sell to the visiting buyers.

6. Some wool is sold through farmers' coöperative sales agencies. But these organizations have in the past been so poorly administered, as a general rule, that they have not been successful.

7. Finally, there remains the method whereby almost all the British and colonial wools are sold — namely, by auction. Auction sales have been established for almost a century in London, Liverpool, Antwerp, Bremen, Hamburg, Marseilles, and recently in Australia. This method of disposing of their raw product does not, however, appeal to the American growers, because of the inherent American trading instinct. It is also not very feasible in this country, because the wool is not graded in the shearing sheds and because sheep-raising is not standardized.

On account of the careless method of growing and packing in the United States, no one cares to purchase wool at auction in this country, as is done in other parts of the world. As a result a middleman, called the wool merchant, buys the wool and attempts to classify it and then sells direct to the mill. It is true that some of the large woolen mills, such as the American Woolen Company, have large staffs of wool buyers who buy direct. Boston is the wool center of the United States and the second largest wool market of the world. Nearly two-thirds of both domestic and imported wools used in this country are handled through Boston markets. The bankers in Boston are more liberal to the wool merchants than are the bankers in New York City, hence the wool market tends to remain there. Other wool markets are Philadelphia, Chicago, and St. Louis.

Prices of wool in England are governed by the prices obtained for the raw wool at the auctions at the end of the wool season, when the raw wool that has been clipped and packed has been sent to the warehouses. In the United States wool buyers go to the warehouses in the West, and after examining the wool offer a price.

Wool is sold at London and at Bradford, England, in April of each year. The wool is exposed attractively during the auction. The following gives a list of sales and prices for 1932:

Offerings totaled 12,160 bales, making a total of 82,000 catalogued during the series. Estimated purchases were: Home, 38,000; Continent, 32,000. The 97,000 bales held over included 88,500 bales that were unoffered. Compared with March, merinos and fine greasy crossbreds ranged from par to 5 per cent lower, medium and coarse crossbreds 5 per cent lower, and slipe crossbreds 5 to  $7\frac{1}{2}$  per cent cheaper. Cape wools were 5 per cent lower compared with March and Puntas fine greasy crossbreds were par to 5 per cent lower, while inferior wools were 5 to 10 per cent lower. Sales at pence per pound were:

Origin	Sales	—Merinos—		—Crossbreds—	
		Scoured	Greasy	Scoured	Greasy
Sydney.....	484	.....	$7\frac{3}{4}$ –11d	.....	.....
South Australia.....	413	.....	$8\frac{3}{4}$ – $11\frac{1}{4}$ d	.....	.....
New Zealand.....	5,248	.....	.....	.....	4–8 d
Cape.....	760	8–11 d	4– $8\frac{3}{4}$ d	.....	.....
Puntas.....	5,036	.....	.....	.....	$5\frac{1}{2}$ – $10\frac{3}{4}$ d

Coöperative marketing offers more protection for wool growers during a depression period than at any other time. The National Wool Marketing Corporation has 35,000 grower-members. Heavy tonnages of cheap cash wool are detrimental to the market at a depression period.

At this time the coöperative association is making advances in some States on the basis of advancing 75 per cent of the value of the wool to members. Advances already have been made on several million head of sheep in the principal wool-producing States.

**Kinds of Wool.** It would not be possible to give in detail the various breeds of sheep existing in different countries. Merino sheep are now bred in many parts of the world, and, together with the high crossbreeds, are the source of all the fine wools known as merino, half-blood, and three-eighths wools. Long wools are derived from various native breeds, chiefly English, and from the lower crossbreeds of merinos, such as quarter and low quarter bloods. Chinese, Siberian, and Turkish wools, as well as many other uncultivated or non-domestic types, are usually very long and coarse, and are known as carpet and braid wools.

Most of the best merino wools come from Australia, the next best from South Africa and from South America. The latter have one fault in that they contain many spiral burrs, which are difficult to remove and which frequently get through the machines and show up as imperfections in the cloth. Europe grows some very fine short wools, but these scarcely ever leave the countries where they are grown.

United States wools are known as "domestic" and "territory." Domestic wools are those grown in the eastern and middlewestern States, notably in the Ohio valley. These include the highest grades of merino wools grown in this country. It must be remembered that sheep raising began in the East and, as civilization expanded, was gradually crowded farther and farther westward. The opening of the Erie canal in 1825 made available the fertile pasture lands of the Ohio valley. The Ohio canal eight years later opened up still more territory, and in 1849, during the famous gold rush, sheep were first taken to California.

The territory wools are those grown in the Rocky Mountain plateau states. Recently, with improved methods and greater care in breeding, some very fine wools have come from Idaho, Wyoming, Nevada, and Montana, and from a few other States. The Texas and California wools are usually classed separately, because they are in most cases clipped twice a year.

Wool before it is scoured contains a large quantity of yolk, or natural grease, besides dust and vegetable matter, and a considerable amount of dried perspiration, or suint. The amount of weight lost through the removal of these substances when the wool is scoured is termed shrinkage. It will be readily appreciated that this is a very important factor in connection with the purchase of grease wool. The shrinkage varies from 20 per cent to 80 per cent. Nevertheless, a good buyer will often be able to estimate within one or two per cent. The factors to be considered in this connection are the breed, the soil, the climate, and the care with which the sheep are raised, as well as the diligence with which the fleeces are prepared for market. Fine wools always shrink more heavily than coarse wools; and pulled wools, since they are washed and brushed during the process, show a very much lower shrinkage than fleece wools. The average shrinkage of United States wools is

about 55 per cent. Fine domestics shrink about 60 per cent; lower grades about 45 per cent. Fine territory wools shrink about 65 per cent; lower grades about 55 per cent. Pulled wool averages about 27 per cent shrinkage. Fine Australian wools average 49 per cent; although they are the finest, the fleeces contain less dirt. Cape wools shrink about 62 per cent, and South American about 51 per cent.

**Financing of the Wool Trade.** From the banker's point of view there are many distinctive features of the wool trade which exercise an important bearing upon the judgment of a credit risk. To begin with, we find that in many instances the large raisers of sheep have built up their own banks. In Texas, for instance, there are a number of banks whose chief business consists in financing the wool clips of their sections. At the other extreme, we have the small grower of the East, who is frequently at the mercy of the local storekeeper. Where the wool growing is practiced on a large scale in this country, the tendency is to reduce the business to a scientifically standardized scale, similar to Australia. The more this is done the more independent the grower becomes, and the easier it is for a bank to determine the strength of the individual risk. The sheep raiser has, of course, one primary asset — his flocks; and if he is compelled to borrow, the security behind his note rests upon his sheep. In making a loan to a sheep man, a bank has to consider not only the market value of the animals, but the conditions under which they are being raised. Sheep are affected by droughts, for instance, and many flocks have been ravaged by predatory animals or decimated by disease. Any one of these contingencies may at any moment destroy or depreciate the bank's collateral, and for this reason borrowing of this sort is confined very largely to banks situated in sheep-growing sections, which specialize in this form of loan.

It would be of great interest to figure the average cost of production per pound of wool to the grower, but, with the varying conditions encountered in different parts of the country and with sundry breeds, an accurate estimate can hardly be arrived at. Even the cost of shearing is variously figured from ten to nearly thirty cents. Generally speaking, however, the grower needs very little financial assistance, because he is able to sell his entire clip for cash.

The buyers representing merchants — or in a few cases, mills — are prepared to pay cash for their wool, and in some cases where they feel sure of a rising market, often go so far as to buy the wool on the sheep's back before it is shorn. Provided the grower knows something about wool and the existing demand, there is no reason why, from the proceeds of one clip, he should not be able to meet his costs up to the time of the next shearing.

The merchant has a very different problem. As we have seen, he buys for cash, and not only sells on credit, but carries a large proportion of what he buys for several months before he can dispose of it. There are so many kinds of wool merchants that it is almost impossible to make any general observations. One merchant, for example, may specialize entirely in domestic wools; in that case he would do all his buying in the spring months, and would gradually dispose of his material, having first graded it, during the remainder of the year. Another house might do the bulk of its business in South American wools, which would mean a fall purchasing season. Still another would handle both domestic and South American, and a fourth might import from all parts of the world, so that buying and selling would be going on continuously throughout the year. The credit requirements of the first two houses would be an easier demand upon the bank than those of the latter, but in all cases the judging of the risk involves several primary considerations, each of which really necessitates the close study of the individual case.

A wool merchant's business is largely based on his estimate of the future. Were it not for the fact that he assumes a risk which neither the grower, nor, in most cases, the manufacturer, is able to take, he could not maintain his position as the middleman. The merchant's buyer must, as we have seen, be able to judge the amount of shrinkage within a very small fraction; he must know the demand for each quality of wool so that he may be sure not to pay more than he can sell for; and, what is more, he must be able to forecast the future with a certain amount of accuracy in order to make his profit. Furthermore, the merchant must be constantly on his guard against doing more business than his capital warrants, while at the same time, unless he makes every dollar work, his business will in normal times fail to show him a profit.

Some wool dealers have become considerably more than middlemen, and have gone quite extensively into the first stages of manufacture. This is particularly true of some of the large houses, which of recent years have established top manufacturing departments, and therefore sell a large proportion of their goods not as raw wool but as tops and noil.

Although the dealers do the bulk of the commission work in consignment sales, there are many brokers whose function is primarily the buying and selling for the accounts of others. These houses usually operate with a limited capital and are not extensive seekers of credit.

QUOTATIONS ON WOOL TOPS FUTURES

Wool for worsted fabrics is combed to remove the short fibers or waste, called *noils*. The combed wool is called *top*.

	Opening	Closing	Previous closing
April.....	62.00-.....	62.00-.....	62.50-.....
May.....	63.00-64.00	<sup>1</sup> 63.00-.....	<sup>1</sup> 63.50-.....
June.....	63.00-64.00	<sup>1</sup> 63.00-.....	<sup>1</sup> 63.50-.....
July.....	63.00-64.00	<sup>1</sup> 63.00-.....	<sup>1</sup> 63.50-.....
Aug.....	63.00-64.00	<sup>1</sup> 63.20-.....	<sup>1</sup> 63.50-.....
Sept.....	63.00-64.00	<sup>1</sup> 63.20-.....	<sup>1</sup> 63.50-.....
Oct.....	63.00-64.50	<sup>1</sup> 63.50-.....	<sup>1</sup> 63.50-.....
Nov.....	63.00-64.50	<sup>1</sup> 63.50-.....	<sup>1</sup> 63.50-.....
Dec.....	63.00-64.50	<sup>1</sup> 63.50-.....	<sup>1</sup> 63.50-.....
1933 —			..
Jan.....	63.50-64.50	<sup>1</sup> 63.50-.....	<sup>1</sup> 63.50-.....
Feb.....	63.50-65.00	<sup>1</sup> 63.50-.....	<sup>1</sup> 63.50-.....
High and low: July, 63.00-63.00; October, 63.50-63.50.			
Boston spot market, 69.50.			
Antwerp prices (pence and eighths per pound) :			
		Close	Prev. close
May.....		21 <sup>1</sup> / <sub>2</sub>	21 <sup>3</sup> / <sub>4</sub>
July.....		21 <sup>5</sup> / <sub>8</sub>	22
September.....		22	22 <sup>1</sup> / <sub>4</sub>
December.....		22	..
Roubaix-Turcoing prices (francs and centimes per kilo) :			
			Prev. Thurs. close
	Opening	Closing	
May.....		18.80	18.80
July.....		19.00	19.00
September.....		19.20	19.20
December.....		19.50	....
<sup>1</sup> Nominal.			

<sup>1</sup> WOOL AND SUBSTITUTE QUOTATIONS

*Ohio, Pennsylvania and West Virginia*

Fine delaine.....	49-50
Fine clothing.....	38-39
$\frac{1}{2}$ blood.....	50-51
$\frac{3}{8}$ blood.....	52-53
$\frac{1}{4}$ blood.....	52-53

*California*  
(Scoured Basis)

Northern, 12 mo.....	1.12-1.15
Southern, 12 mo.....	.93- .97

*Texas*  
(Scoured Basis)

Fine 12 mo.....	1.15-1.18
Fine 8 mo.....	1.09-1.12

*Pulled — Eastern*  
(Scoured Basis)

A.A.....	1.15-1.20
A-Super.....	1.05-1.08
B-Super.....	.93- .98
C-Super.....	.83- .87

*Montana, Idaho, and Wyoming*  
(Scoured Basis)

Staple fine.....	1.17-1.20
Do. $\frac{1}{2}$ bld.....	1.12-1.15
Fine & fine medium.....	1.08-1.10
$\frac{3}{8}$ blood.....	1.02-1.05
$\frac{1}{4}$ blood.....	.95- .98

*Mohair — Domestic*

Best combing.....	.75-78
Best carding.....	.50-55

*Wool Waste*

Lap —	
Fine white.....	1.23-1.25
Fine colored.....	.92- .95
Thread White Worsted —	
Fine.....	.93- .95
$\frac{1}{2}$ blood.....	.83- .87
$\frac{3}{8}$ blood.....	.73- .75
$\frac{1}{4}$ blood.....	.63- .65
Thread Colored Worsted —	
Fine Two-ply.....	.36- .37
$\frac{1}{2}$ blood, Two-ply.....	.30- .33
$\frac{3}{8}$ blood, Two-ply.....	.28- .30
$\frac{1}{4}$ blood, Two-ply.....	.25- .28
Card —	
Fine white.....	.53- .57
Medium white.....	.35- .37

*Mohair — Foreign (In Bond)*

Turkey Fair average.....	48-50
Cape Firsts.....	50-52

*Foreign Clothing and Combing*  
(In Bond)

Scoured Basis —

Canadian:

Alberta F & F medium...	1.10-1.12
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Cape:

Super 12 months.....	1.08-1.10
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Super 10-12 months...	1.02-1.05
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Australian:

70s.....	1.15-1.18
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64s.....	1.02-1.05
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58-60s.....	.90- .92
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Grease Basis —

Montevideo:

58-60s.....	53-54
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56s.....	51-52
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50s.....	49-50
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Buenos Aires:

4s, 40-44s.....	37-38
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5s, 36-40s.....	35-36
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*Foreign Carpet*  
(Grease Basis in Bond)

China: Combing No. 1.....	25-26
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China Filling Fleece.....	23-24
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Szechuen ass't.....	23-24
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Cordova.....	24-25
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Scotch Black Face.....	25-26
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East India: Kandahar.....	37-39
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Vican'r.....	40-44
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Joria.....	43-48
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Aleppo.....	36-37
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*Old Woolen Rags*

Merinos —

Coarse light.....	6 $\frac{1}{2}$ 7
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Fine dark.....	4 $\frac{1}{2}$ 5
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Fine light.....	14 -15
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Serges —

Blue.....	6 $\frac{1}{2}$ 7
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Black.....	6 $\frac{1}{2}$ 7
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Red.....	14 $\frac{1}{2}$ -15
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Knit —

White.....	41 -42
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Red.....	14 $\frac{1}{2}$ -15
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Light hoods.....	20 -21
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Worsted —

Light.....	7 $\frac{1}{2}$ 8
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Blue.....	7 $\frac{1}{2}$ 8
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Black.....	6 - 6 $\frac{1}{2}$
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<sup>1</sup> See author's trade edition of *Textiles* for explanation in detail of terms.

Wool and worsted yarn quotations are published in the trade papers from day to day.

TOP AND NOIL QUOTATIONS

Tops — Boston

Fine.....	(64-66s)	\$1.45
Half-blood.....	(60-62s)	1.35/ 1.37
High $\frac{3}{8}$ blood.....	(58s)	1.28 $\frac{1}{2}$ /1.30
Aver. $\frac{3}{8}$ blood.....	(56s)	1.23 $\frac{1}{2}$ /1.25
Low $\frac{3}{8}$ blood.....		1.17 $\frac{1}{2}$ /1.20
High $\frac{1}{4}$ blood.....	(50s)	1.15
48s N. Z.....		1.08/ 1.10
46s S. A.....		1.05
44s.....		1.00
40s.....		.92 $\frac{1}{2}$
36s.....		.92 $\frac{1}{2}$

Tops — Bradford, Eng.

Fine.....	(70s)	57d
Fine.....	(64s)	55 $\frac{1}{2}$ d
Half-blood.....	(60s)	53 $\frac{1}{2}$ d
Half-blood, low.....	(58s)	47 $\frac{1}{2}$ d
Three-eighths blood.....	(56s)	43d
Quarter-blood.....	(50s)	34d
Cross-bred.....	(46s)	27d

Noils — Boston

Fine.....	\$ .95-\$.98
Half-blood.....	.85- .90
High $\frac{3}{8}$ blood.....	.75- .80
Aver. $\frac{3}{8}$ blood.....	.65- .70
Low $\frac{3}{8}$ blood.....	.60- .63
High $\frac{1}{4}$ blood.....	.60- .62
46s.....	.53- .55
44s.....	.50- .52

WORSTED YARN QUOTATIONS

Bradford System

2-12s, low com. (36s).....	1.10-1.15
2-16s, low com. (36-40s).....	1.15-1.20
2-20s to 2-24s, low $\frac{1}{4}$ (44s).....	1.30-1.35
2-20s to 2-26s, $\frac{1}{4}$ bld. (46-48s) ..	1.37 $\frac{1}{2}$ -1.42 $\frac{1}{2}$
2-26s to 2-30s, $\frac{1}{4}$ bld. (48s).....	1.45-1.50
2-30s to 2-32s, $\frac{1}{4}$ bld. S. A. (46s)	1.50-1.55
2-32s, $\frac{1}{4}$ bld. (48-50s).....	1.55-1.57 $\frac{1}{2}$
2-20s, $\frac{3}{8}$ bld. (56s).....	1.57 $\frac{1}{2}$ -1.60
2-26s, $\frac{3}{8}$ bld. (56s).....	1.62 $\frac{1}{2}$ -1.65
2-36s, $\frac{3}{8}$ bld. (56s).....	1.67 $\frac{1}{2}$ -1.70
2-32s, $\frac{1}{2}$ bld. (60s).....	1.75-1.77 $\frac{1}{2}$
2-36s, $\frac{1}{2}$ bld. (60s).....	1.80-1.82 $\frac{1}{2}$
2-40s, $\frac{1}{2}$ bld. (60s).....	1.85-1.87 $\frac{1}{2}$
2-50s, high, $\frac{1}{2}$ bld. (64s).....	2.00-2.05
2-50s, fine (66-70s).....	2.07-2.12
2-60s, fine (70s).....	2.60-2.65

French System

high, 20s, $\frac{1}{4}$ bld. (50s).....	1.50
20s, $\frac{3}{8}$ bld. (56s).....	1.57 $\frac{1}{2}$
26s, $\frac{1}{2}$ blood (56s).....	1.62 $\frac{1}{2}$
30s, $\frac{1}{2}$ bld. (60s).....	1.77 $\frac{1}{2}$ -1.80
30s fine warp (66-70s).....	1.87 $\frac{1}{2}$ -1.92 $\frac{1}{2}$
40s, $\frac{1}{2}$ bld. (60-64s).....	1.95-1.97 $\frac{1}{2}$
50s (66-70s).....	2.12 $\frac{1}{2}$ -2.17 $\frac{1}{2}$
60s (70s).....	2.62-2.72

Knitting Yarns in Oil (Bradford)

2-20s, low, $\frac{1}{4}$ bld. (44s).....	1.25-1.30
2-18s to 2-20s, $\frac{1}{4}$ bld. (50s).....	1.42 $\frac{1}{2}$ -1.45
2-26s, $\frac{1}{4}$ bld. (50s).....	1.47 $\frac{1}{2}$ -1.50
2-30s, $\frac{1}{4}$ bld. (50s).....	1.52 $\frac{1}{2}$ -1.55
2-20s, $\frac{3}{8}$ bld. (56s).....	1.57 $\frac{1}{2}$ -1.60
2-20s, $\frac{1}{2}$ bld. (60s).....	1.75-1.80

French Spun Merino White

30s, 50-50.....	1.35-1.37 $\frac{1}{2}$
30s, 60-40.....	1.45-1.47 $\frac{1}{2}$
30s, 70-30.....	1.55-1.57 $\frac{1}{2}$
30s, 80-20.....	1.65-1.67 $\frac{1}{2}$

So far as the manufacturers or mills of various sorts are concerned, there is one striking difference between the commercial paper of woolen and worsted mills and that of cotton mills, which appears in the open market; cotton mill paper, except in the case of the strongest mills, usually bears the endorsement of the commission house which sells the mill's product, but this is not as a rule the case with woolen and worsted mill paper. The reason is that a large number of the wool manufacturing establishments sell direct to wholesalers and jobbers, and have no close affiliation with a selling house.

Trade terms vary a good deal. Raw wool is almost invariably sold for cash by the grower. Dealers make various terms to mills, the most usual being 1 per cent ten days, sixty days net. The terms on which mills sell to jobbers also have a wide range; some sell thirty days net, some 10 per cent thirty days, others 7 per cent four months.

**Marketing Silk.** Silk is bought and sold in the raw condition, and as yarn and cloth. A knowledge of the technical terms of different kinds of silk will assist in understanding quotations.

The raw silk, having been reeled and twisted into skeins, is next marked and tied together in bundles of skeins known as "books," each bearing the mark or "chop" of its grade. These are packed in bales for shipment, the weight of the bales varying in different countries. In Japan and China they are called picul bales and weigh  $133\frac{1}{3}$  pounds. Italian silks, on the other hand, are packed in shipping bales of about 200 pounds.

Of the countries producing raw silk, Japan and China occupy the leading positions by a large margin, the former contributing about one-half of the world's supply, and the latter about one-third. Italy supplies about one-tenth of the total supply, and France, the Near East, India, Spain, and the Balkans contribute the balance.

Although the greater part of the raw silk produced in the various countries is exported for manufacture abroad, a certain percentage is retained for home spinning and weaving. It is estimated that about 65 per cent of the Japanese output is exported, approximately 90 per cent of which goes to the United States. In China over one-half of the output is held for domestic consumption, the remainder

being divided about equally between Europe and America. The Italian raw silk — a very high quality product — finds its largest market in France, principally in the city of Lyons, the silk center of Europe.

The principal raw silk markets of the world are Yokohama, Lyons, New York, Milan, and Canton. Of these, Yokohama is probably the largest and most important, because of the pre-eminent position of Japan in raw-silk production.

The Yokohama Raw Silk Exchange operates on a basis similar to that of the various cotton exchanges, and transactions are carried on in futures as far ahead as five months. The speculative element is very active, and its influence is often felt extensively throughout all phases of the industry. On several occasions it has been necessary to close the exchange to avert real disaster after the quotations had been manipulated to an unbelievable extent. During the last few years the Japanese government and various silk organizations have, by law and regulation, succeeded in improving this situation to a great degree. The benefit has been felt throughout the industry.

Raw silk is sold by weight — in Yokohama, by net weight, that is, less wrappings, etc. In most countries it has been the custom of recent years to deal by conditioned weight. As a result the conditioning process has become an important side line in the industry.

Conditioning is desirable principally on account of the fact that raw silk absorbs considerable moisture. A careless buyer may find after delivery that he has purchased more water than he has silk. To avoid this possibility, Asiatic and European markets have adopted the conditioned weight basis — absolute dry weight plus 11 per cent moisture. Quotations are often given on invoice weight, which is conditioned weight plus a 2 per cent margin for variation.

A conditioning house, besides examining for weight, conducts numerous other tests. The main factors considered besides weight are size, color, cleanliness, boil-off, winding strength, elasticity, and general uniformity.

As regards size, the unit is the denier, an ancient French weight equal to .05 gram; the size is measured by the weight in deniers

of 450 meters of the thread. The 13/15 denier size is the standard used in the United States, although the larger and smaller grades are dealt in to some extent for special types of products. Size is always given as averaging between two certain deniers (such as 13 to 15), as it is impossible to attain absolute accuracy in reeling, and slight variations can not be avoided, either within the bales or within the skeins themselves.

The color test is concerned merely with uniformity in shade, which makes accurate dyeing possible. The cultivated silks are either pure white or yellow, according to the variety of cocoon from which they are derived.

The term "boil-off" refers to the amount or percentage of gum on the filament. The individual strands of fiber adhere through a gummy substance secreted by the worm. The amount found in the reeled silk varies from 10 to 25 per cent, by weight. This is brought down to a minimum by the boiling process.

Winding strength is measured by the breaks that occur in winding. In this country the test is based on the number of breaks occurring in thirty or more skeins wound at the rate of about 120 yards per minute. This test is extremely important, since a weak thread can do much to hinder an efficient re-reeling process, inasmuch as each break stops the machine and must be tied by the operator.

**Grading and Quotations.** The classification of raw silk for market and the various terms used for its purchase and sale are quite complicated. Standardization has been sought for a good many years, and committees both here and abroad have studied the problem on various occasions, but without entirely satisfactory results. The chief source of trouble appears to lie in the many types of variation that may occur, not only on account of the great number of qualities required in the product, but also because of the varying conditions under which the silk is produced. In the early days of the industry, when farm production was the chief source of supply, particularly in Japan and China, satisfactory grading was almost impossible. However, now that sericulture and reeling have come more and more into the hands of the large companies and filatures, a greater degree of standardization can be reached.

The following is a copy of a recent quotation list in the New York market as it appeared in a commercial paper :

JAPAN	
(Ninety Days' Basis, 13-15 Denier)	
Kansai	Double Extra Cracks.....\$6.15 @ \$6.20
Kansai	Double Extra "A".....6.05 @ 6.10
Kansai	Double Extra "B".....6.00 @ 6.07
Kansai	Best Extra.....5.95 @ 6.02
Kansai	Extra.....5.90 @ 5.97
Kansai	Best No. 1 to Extra.....5.87 @ 5.95
Kansai	Best No. 1.....5.85 @ 5.92
Kansai	No. 1.....5.82 @ 5.90
Sinshiu	No. 1.....5.77 @ 5.58
CANTON	
(Ninety Days' Basis)	
King Seng gr. 14-16.....	\$6.40
Favorite — Double Extra 20-22.....	6.00
Favorite — Double Extra 22-26.....	5.90
SHANGHAI	
(Ninety Days' Basis)	
CHINA STEAM FILATURE	
Gold Double Deer, new crop.....	\$7.50
Geranium, new crop.....	7.25
Comet.....	6.60
Tsatless Blue Dragon and Flying Horse.....	5.60
Black Lion, No. 1-2.....	5.10
Tussah — Best chops.....	3.90
ITALIAN	
Grand Extra Classical.....	\$7.00
Extra Classical.....	6.80
Best Classical.....	6.70

In the Japanese classification, the terms *Kansai* and *Sinshiu* originally indicated the sections of Japan where the silk originated, but of recent years they have come to mean hard or soft natured silks, respectively. The Sinshiu No. 1 is usually considered the standard quotation to use in judging the market trend.

The Chinese quotations are probably the most difficult to understand, since they go almost entirely by "chop" — that is, well-known brands which are marked in some distinctive way, as shown on the above list of quotations.

**Marketing Thrown and Spun Silk.** Thrown and spun silk are bought and sold in very much the same way as is raw silk, although the market is not so extensive nor is the volume of trading as large.

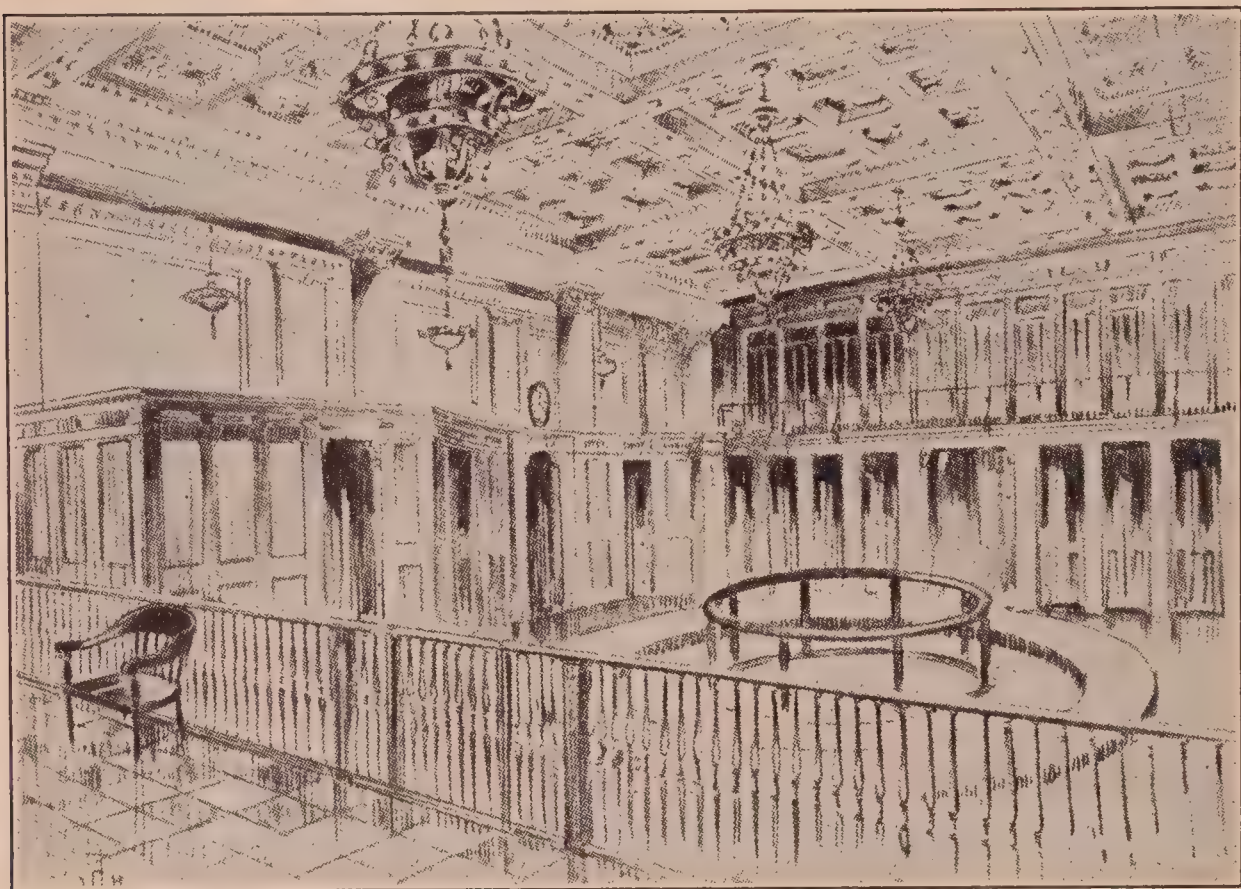
The following tables of quotations are from a recent silk journal. A comparison with the previous quotations will show the appreciation in value of the various gradings through the throwing and spinning processes.

QUOTATIONS ON THROWN AND SPUN SILK	
THROWN SILK	
Organzine	
Double Extra Crack.....	\$7.30
Double Extra.....	7.20
Extra.....	7.10
Tram	
Extra.....	\$6.85
Best No. 1.....	6.75
Kansai No. 1.....	6.70
Japan Crêpe Twist, 2 thread, 75 turns.....	7.80
Japan Crêpe Twist, 3 and 4 thread, 60-65 turns....	7.25
Canton Crêpe Twist, 3 and 4 thread, 60-65 turns...	7.20
Hosiery Tram.....	6.75
SPUN SILK	
	2% net 30 days
6/2.....	\$4.25
10/2.....	4.35
20/2.....	4.75
30/2.....	5.15
40/2.....	5.35
50/2.....	5.50
60/1.....	4.45
60/2.....	5.60

**Raw Silk Exchange.** The advantages that the cotton industry has long enjoyed through the establishment of cotton exchanges now accrue to the members of the silk industry through the establishment of the National Raw Silk Exchange, Inc.

Price fluctuations in silk during past years have been great, and the risk of loss from sudden changes is ever present. The owner of unhedged raw silk is exposed to the risk of loss over a period of possibly many months. The hazards which he faces are entirely beyond his control. Such factors as weather conditions in Japan, diseases of the silkworm, the number of egg cards available for hatching, economic influences affecting the financial condition of the silkworm raiser, political disturbances — all influence directly the course of silk prices. With the Silk Exchange in operation the importer may hedge his purchases of raw silk by a corresponding sale of futures, and thus be assured that he will make his trading

profit. Similarly he may contract to sell silk which he has not yet purchased in Japan and insure himself against the risk of a price advance by immediately purchasing a future. Every dealer in raw silk may protect himself in like manner. The manufacturer may



TRADING FLOOR OF NATIONAL RAW SILK EXCHANGE

hedge by selling raw silk futures, when he buys his physical silk; then if prices decline, while he will receive a lower price for his finished goods, this loss will be offset by the profit realized on his future sale if the prices of raw material and finished goods move in substantial parity. The manufacturer, furthermore, may contract ahead for delivery of finished goods and by the purchase of futures make certain that his manufacturing profit will not be impaired or wiped out by a rise in raw silk prices before he obtains the grade he needs in the cash market.

The peril attendant upon untoward price fluctuations is more imminent and of more frequent occurrence than any of the risks against which standard insurance policies are written. By thus making protection available to every member in the industry in whose hands raw silk remains for any considerable time, or who contracts for the delivery of finished goods before the raw product

is bought, or who manufactures for stock, the National Raw Silk Exchange, Inc., offers a service which should prove of vital importance.

**A Typical Transaction on the Raw Silk Exchange.** Mr. Brown, a dealer in raw silk, decides to purchase fifty contracts of May silk. It is the month of January, and he telephones the commission house of John Doe & Co. to buy "fifty May silk" at the market. The order is entered in the books of John Doe & Co. and immediately telephoned to the Exchange. A direct wire connects the offices of John Doe & Co. with the Exchange floor. Around the floor of the Exchange are rows of telephone booths, which are leased by Exchange members and attended by their clerks. The clerk of John Doe & Co. takes down the particulars of Mr. Brown's order and then hands the memorandum to Wilkins, John Doe & Co.'s floor broker. Wilkins at the ring hears May silk being offered at \$5.00 and bids being made for May silk at \$4.98. He instantly knows the actual market for May silk, viz. : \$4.98 bid, \$5.00 offered. The purchase is immediately made at \$5.00 per pound. No writing is exchanged between the brokers, but the contract, made by word of mouth at the ring, is inviolable. As soon as the transaction has been made, a uniformed attendant at the ring signals the price and the amount of silk bought to the recording clerk, who sits on a bridge above the Exchange floor. The particulars of the transaction are recorded in the Exchange's permanent records and at the same time relayed to an attendant at the blackboard which stretches across one wall of the trading room. The attendant promptly chalks up the particulars of the transaction. Thus the brokers at the ring have constantly before them a record of the day's transactions, a glance at the blackboard at any time informing them of the course of prices for each trading month. Simultaneously with the recording of the transaction the ticker operator, also stationed on the bridge, flashes the price to his central office, from which it is instantly sent out to the tickers located in the offices of silk merchants and commission houses throughout the country.

When the purchase has been made, John Doe & Co.'s attendant reports it back to his office by telephone. Within a short time after placing his order, Mr. Brown receives the confirmation and knows the price at which he has obtained his silk.

RAYON GRAY GOODS

All-Rayon Crêpes

Count	Width	Warp	Filling	
80 × 40	40½	150-36	100-40	18½-19
96 × 56	42	150-60	100-40	27
96 × 48	42	150-40	100-40	24
80 × 48	40½	150-36	100-40	19½-20
114 × 64	42	100-40	100-40	30½-31
120 × 68	42	100-40	100-40	32½

Rayon-Filled Flat Crêpes

(45s Crêpe Warp)

76 × 60	150-60	11½
76 × 56	150-60	10½
76 × 48	150-32-40	9-9½
76 × 52	150-32-40	10
68 × 50	35-inch Mock Crêpe	7½
68 × 48	35-inch Mock Crêpe	7-7½

Twills and Taffetas

(First quality warp, second quality filling.)

88 × 44	39-in.	150 den. twill	17-17½
88 × 44	35-in.	150 den. twill	16½
80 × 36	36-in.	150 den. taffeta	14
92 × 40	35½-in.	150 den. taffeta	17
84 × 60	all-rayon taffeta		20½
76 × 52	all-rayon taffeta		17½
114 × 52	39-in.	150 den. warp	
	3-thread 13-15 Japan		
	tram fill., twill		20½
120 × 52	39½-in.	150 den. warp,	
	3-thread 13-15 Japan		
	tram fill., twill		21½-22

Rayon Georgettes

64 × 56	43-44-in.	24½-25
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Voiles

60 × 54	35½-in.	75 den. rayon	15½-16
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Rayon, Cotton Serges, Poplins

80 × 56	36-in.	30s K. warp,	
	150 denier filling	12½-12¾	
120 × 56	37-in.	150 den. warp,	
	60-2-ply mercerized filling	22½-23	
80 × 36	36-in.	150 den. warp,	
	40-3-ply filling, poplin	c17½	
74 × 36	36-in.	150 den. warp,	
	40-3-ply filling, poplin	c16½	

Plain Rayon Filled Goods

60 × 40	carded warp	6½
60 × 40	combed warp	7-7½
60 × 44	combed warp	7½
64 × 48	combed warp	8
64 × 52	combed warp	8½
64 × 60	32-40 filament	9-9½
68 × 64	60 filament	12

ACETATE FABRICS

(All Acetate Prices Net)

(150 Denier Warp and Filling)

Twill

112 × 72	37	Act. W. Ray. F	30½-30¾
120 × 72	37	Act. W. Ray. F	32½-33

Plain

84 × 68	40½-41	Ray. W. Act. F	29-30
84 × 68	41	Act. W. Ray. F	28½-29½
84 × 72	40½	All-Acetate	29½
84 × 60	All-Acetate taffeta		28½-29

Voile

64 × 64	39	75 denier	23½-24
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Ninon

80 × 80	39	75 denier	29½
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PLAIN SILK AND COTTON

35-in. Canton Filled

Count	Den.	Price	Count	Den.	Price
88 × 32	22-26	7-7½	96 × 100	22-26	12
96 × 64	22-26	8	96 × 100 <sup>1</sup>	14-16	14½
96 × 92	22-26	11½	96 × 104 <sup>1</sup>	22-26	17

<sup>1</sup> Two-End.

Tussah Filled

Wid.	Count	Price	Wid.	Count	Price
34	80 × 56	11-12	35	96 × 96	19-20

Legend—c Contract.

**The Clearing Association.** When the day's trading ends, the floor brokers gather around long tables, which are brought out on the Exchange floor, and exchange contract slips, which are confirmation memoranda of the trades they have executed during the day. The seller signs the buyer's slip and the buyer signs the seller's. From these slips Exchange members who are also mem-

bers of the National Raw Silk Clearing Association, Inc., make up their daily reports to the Clearing Association.

The Clearing Association is an independent corporation, formed to clear trades for members of the Exchange who are also members of the Clearing Association. Exchange members who do not belong to the Clearing Association may clear their trades through Clearing Association members. The Clearing Association assumes and guarantees every contract which is cleared. It becomes the seller to every buyer and the buyer from every seller. When Brown's contract to buy fifty May silk is cleared, John Doe & Co. and the house from which the purchase was made cease to deal with each other. The Clearing Association becomes the seller to John Doe & Co. and the buyer from the other party to the contract.

Any member of the Exchange may become a member of the Clearing Association upon compliance with certain specific requirements. Among other things he must deposit with the Clearing Association \$10,000 as security for the fulfillment of all contracts which he offers for clearance. In addition he must deposit with the Clearing Association a fixed sum for each contract which he offers for clearance. He must keep good these deposits by further deposits to meet variations in the market price at any time during the day. Within one hour after demand is made upon him by the Clearing Association for additional margins to keep good his deposits, the Clearing member must respond; otherwise his contracts will be closed out.

A small service charge is made for clearing each trade. Over a period of years these small charges accumulate into an impressive surplus, and this surplus serves to fortify further the guarantee of the Clearing Association. In the history of commodity exchanges there is no record of the loss of a dollar by failure to fulfill a contract guaranteed by an exchange clearing association.

**Advantages of a Commodity Exchange.** The advantages of a commodity exchange may be summarized as follows:

1. It provides dealer and manufacturer with a means of insuring himself against the risks of price fluctuation in the raw commodity.
2. It renders stocks of the commodities liquid.
3. The ability to hedge and the liquidity of stocks greatly facilitate financing.

4. The improved facilities for financing permit dealer and manufacturer to do business on a larger scale and at a closer profit margin.

5. By its contact with other markets and its widespread sources of information, the exchange concentrates and focuses world-wide price influences.

6. The prices established on the exchange, representing a variety of standard grades, reflect the general trend of the whole market.

7. The prices of contracts for future delivery serve as a guide and basis for spot dealings.

8. The exchange, in coöperation with the industry, exerts its influence in the interest of uniform standards of inspection, grading, and weighing.

The Silk Exchange renders these services through operation of a continuous and broad market, one in which silk may be sold or bought at any time during any trading day, and one in which quotations for the delivery of silk, months in the future, are at all times available.

**Hedging.** The most important service which an exchange offers to the merchant dealing in a world-wide commodity is the opportunity to hedge. A hedge is a transaction by which a purchase or a sale of the physical commodity is offset by a sale or purchase of a future. The object is to free the hedger from the risk of adverse fluctuation in the price of the physical commodity. Let us say a dealer in New York purchases raw silk at a price of \$5.00 per pound. He wishes to guard against incurring loss by a price decline before he sells his silk. Accordingly he sells a contract for future delivery on the Silk Exchange. Assuming that the sale is made at the same price he paid for his silk, he has opposite and equal commitments in both the cash and futures market. He disposes of his physical silk, perhaps at a loss, but he has gained exactly this amount on his sale in the futures market, and instead of a loss he has received insurance against loss. If the contrary movement should take place, and the price of raw silk advance, he would lose on the futures transaction but gain an equal amount on the increase in the price of the physical silk. In either case the transaction would be completed with his dealer's profit intact.

The manufacturer who buys raw silk to make into stock or who buys in advance of orders may utilize the hedge in the same way, acquiring his physical silk in the outside market and immediately selling on the Exchange a like amount for future delivery. He will then be protected whichever way the price moves, and will be assured of his manufacturing profit. If the manufacturer has made a forward contract to deliver broadcloth requiring a specific grade of silk, he may obtain protection against a rise in the price of the silk to be manufactured into broadcloth by immediately purchasing exchange futures contracts for the amount of raw silk he will need. He thus obtains insurance against the loss that would be occasioned by a rise in raw silk prices, and when he obtains the specific grades of silk he wishes in the cash market he will close out his purchase in the futures market, and it will be a matter of inconsequence in which direction prices have moved.

**Skill and Experience Required in Hedging.** Theoretically price fluctuations in a physical commodity and in futures have a parallel course. In other words, prices of the physical commodity move up and down in the same ratio as the prices of futures advance and decline. If this unison in price movements were the invariable rule, it would be possible always to obtain perfect protection by a hedge. However, the prices of the physical commodity and the futures prices do not always follow a parallel course, as is shown by price movements of commodities on many exchanges when compared with prices in the cash markets. This relationship of the price of the physical commodity to futures prices is known as *basis*. The perfection of the insurance which the hedge affords is largely dependent upon basis. Skill and experience should guide the hedger in avoiding the risks of lessened protection brought about by frequent changes in the basis. The selection of the month for placing the hedge, certain problems of switching, closing out the hedge, and other technical matters incident to hedging should be the subject of study and consideration by the careful hedger.

**The Exchange as an Aid in Financing.** In the commerce of commodities for which exchanges have been long established, bankers are willing to make larger loans on stocks that are hedged than on stocks that are subject to the risk of loss by constantly occurring price changes. The hedging facilities afforded by

exchanges, therefore, not only protect against risk, but they also encourage sounder financing and make it possible for manufacturers and dealers to obtain better banking accommodations. In commodities wherein hedging is possible through organized futures exchanges, hedging has been an important factor in enabling business to be done on a smaller capital than would otherwise have been possible.

# QUOTATIONS ON RAW SILK FUTURES

The local spot market for crack double extra advanced 1 cent to \$1.46. Closing prices were unchanged to 2 points lower, except August, which was 1 point higher. Total sales were 640 bales. Eighty per cent Seriplane silk in Yokohama advanced 10 yen to 510. Yen exchange declined to 33 $\frac{5}{8}$ ¢, closing with losses of from 11 to 22 yen. Total sales were 1,905 bales.

	Open	High	Low	Close	Prev. close
April.....	1.36	1.36	1.35	1.36 @ —	1.38
May.....	1.33	1.36	1.32	1.36 @ 1.37	1.37
June.....	—	—	—	1.35 @ 1.37	1.36
July.....	1.36	1.36	1.36	1.35 @ 1.37	1.36
Aug.....	1.37	1.37	1.37	1.37 @ —	1.36
Sept.....	—	—	—	1.37 @ 1.38	1.39
Oct.....	1.37	1.37	1.37	1.37 @ —	1.37
Nov.....	1.34	1.37	1.34	1.37 @ —	1.39

**Successful Trading.** The success of every business man, whether he is a merchant or a manufacturer, depends much upon his ability to buy not only at the right time but also at the low price. If we make an analysis of the experience and methods of men and women who are successful in buying wearing apparel, we shall find the following practices important :

1. The buyer must always have on hand a proper supply of stock, not too much or too little. Too much not only involves unnecessary capital but also additional expense in carrying the excess stock, and too little means frequent shut downs and loss of sales, which involve much expense and loss of profits.

2. A list of stock, called an inventory, should be kept. Past experience will show the greatest amount, called the maximum, and the least, called the minimum, of stock found necessary on previous occasions. Records of previous years kept on cards or expressed in curves (graphically) will tell the time of greatest and

least sales, and will also indicate the kinds of wearing apparel that move most quickly and those that move most slowly.

3. The stock clerk or storekeeper in charge of the stock and the records must notify the buyer or business man when the supply reaches the minimum. When the buyer places the order, the stock clerk should report every day the condition of the supply, and also when the new wearing apparel or goods are received. In case there is a delay in shipping, a strike at the mill, or a break-down in the machinery, the buyer must be able to secure an emergency supply at short notice, so that no profits are lost through loss of sales.

4. A successful buyer must know the wearing apparel he purchases, not only the steps in manufacturing but also the grades of raw materials and sewn and finished products. In fact, a good buyer should have spent some time in the field or factories securing information at first hand as to the cost of manufacturing and the competition so that he will know the actual cost of the product. A study of the *Journal of Commerce*, *Women's Wear*, and other wearing apparel trade papers will keep one informed of the cost of raw materials and finished articles, etc.

5. It is essential that the buyer should never pay too much, and that he should know the location of competitors and other markets, so as to secure the best prices on wearing apparel.

6. There are two methods of purchasing — on name and on merit. Since the branded or named article is a monopoly, a lower price can be secured on the unbranded wearing apparel. But in order to buy on merit, the buyer must be able to set up certain specifications that experience has taught him, or that his customers demand, and know whether or not the articles measure up to the standard. Many concerns, like R. H. Macy & Company and other dry goods stores, have testing apparatus, and all wearing apparel is bought on specifications and samples are tested.

7. Since the price of wearing apparel purchased by the buyer depends to some degree on the cost of raw materials, it is absolutely necessary for the buyer to become familiar with the market conditions of the raw materials, as well as labor and manufacturing conditions, so that he will gauge the future price trend of the manufactured wearing apparel that he is to buy. This means a

knowledge of the supply and demand of the future. Frequent market reports, government reports from the Bureau of Commerce, trade papers, etc., will provide much of this information. Many cotton manufacturers and silk manufacturers have purchased supplies of cotton and silk at the beginning of the year and have found



MAKING A MICROSCOPIC TEST OF A TEXTILE FABRIC

In a dry goods testing laboratory

that later the price (in times of depression, etc.) has dropped one-half or one-third or less. Then when an inventory of the stock is made for the financial report to the bank or for the public, the stock on hand must be quoted at present, not past, prices, and often the firm shows a loss due to the depreciation in the inventory. Hence the success of a wearing apparel factory is due in no small measure to the ability to purchase at the right time and in the proper quantities, so that one can always secure stock at the reduced prices.

8. The buyer must know the financial condition of the firm, so as to know (a) how much to buy, (b) whether to purchase on cash or credit, and (c) the best time for payment. When the true financial condition is known, better buying judgment can be exercised.

9. The location of all factories of wearing apparel should be known to the buyer, as well as the transit facilities and the factory conditions for sending out the stock. This is absolutely necessary in order that the buyer may make the proper purchases. If imperfect goods, partially filled orders, and slow deliveries are common to the factory, then it can not be depended upon for emergency orders.

10. Since all kinds of wearing apparel are more or less subject to style and are also seasonal in character, the buyer must be alert, familiar with style tendencies and reports from style centers, so that he may buy wearing apparel that will immediately sell, and not remain on hand.

11. Wearing apparel is considered as of two types: (a) staples, and (b) novelties, fancies, or new staples. Standard products like blue serge, conservative styles of jewelry, etc., are called staples, and usually run from season to season. New staples or novelties contain many degrees of style and are subject to constant change. Hence the buyer's ability is tested in the purchase of novelties or fancies, rather than staples.

12. One of the greatest weaknesses of a buyer is overbuying or overstocking. The temptation may be due to a very attractive price, but the tendency must be carefully checked. Overbuying has caused more bankruptcy than any other single cause, because the stock must be paid for regardless of whether it is sold or not, and in order to dispose of a surplus it may be necessary to sell below cost.

13. Every buyer must know intimately the class of people to whom he will sell. He must have their desires in mind when he buys. Frequently campaigns are conducted, particularly by retail stores, to secure a knowledge of the likes and dislikes of the consumers and the character of wearing apparel that will appeal to them. Salespeople are requested to keep a record of all requests.

Every successful business man must not only know how to buy, but also how to sell. A careful analysis of business men who are

successful dealers in wearing apparel will show that success consists of :

1. Very careful buying, low cost of production, and successful selling. The selling price must be equal to the total cost of raw material, cost of manufacturing, cost of selling, *plus* a profit.

2. The plant for manufacturing must be located at a convenient spot, be well arranged and well equipped, efficiently managed, and of a size to meet the demands of the sales.

**Retail Selling.** The retail stores, such as dry goods stores, haberdashery stores, etc., are in direct contact with the consumer and know his needs and wishes. They report these needs to salesmen representing the manufacturers or wholesalers.

The prices of commodities in retail stores usually represent a 50 per cent mark-up above the wholesale price. Sometimes the retail dry goods store will carry articles at no profit, and even at a loss, in order to attract customers, hoping that while they are purchasing the goods sold at no profit, they will become interested enough to purchase other articles that have the regular mark-up of 50 per cent or more.

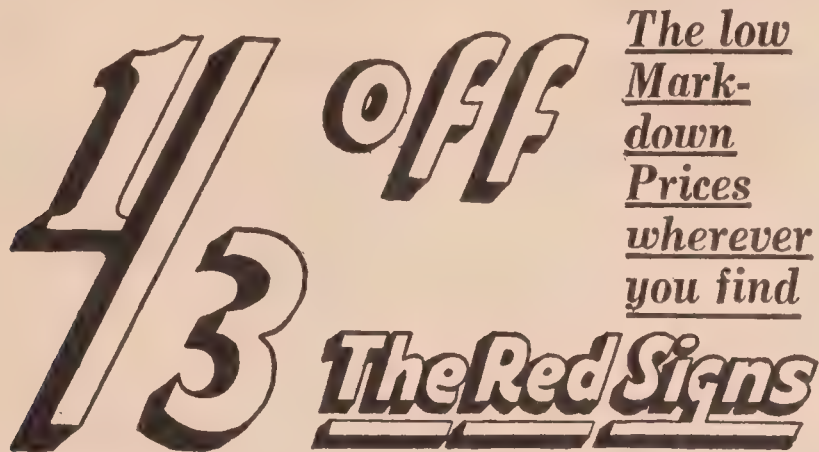
A 50 per cent mark-up on the wholesale price represents a  $33\frac{1}{3}$  per cent profit on the selling price. To illustrate: If a suit manufacturer sells 100 suits at \$15 less 10 per cent for immediate payment, the retail store pays \$13.50. The mark-up is 50 per cent of the wholesale price — \$15 plus \$7.50, or \$22.50. The profit is considered to be \$7.50. The discount of \$1.50 is regarded as an office fund to pay for bookkeeping, etc., and is not considered part of the profit.

At the end of the season, when the mark-downs take place, the sale price is usually one-third off the original price, or, in the example given, a mark-down of \$7.50. The buyer then pays the cost price of \$15.

Sales of wearing apparel may be increased in two ways: (1) by lower prices, arrived at through decreased cost of manufacturing, elimination of waste, and more efficient methods, or (2) by attracting the attention of the public and causing it to increase clothes consumption.

In times of depression, the retail stores that survive are those with the best organization and methods and the minimum waste. Those unable to meet competition are forced into the hands of receivers.

Competition is very keen in retail selling. While each store has a sales policy that may appeal to a certain group of consumers in the community, such as (a) the upper social classes, (b) the



STORE DISPLAY CARD FOR A MARK-DOWN SALE

middle classes and professional people, and (c) the working class, nevertheless they all appeal to the marginal consumers of the group, who are always looking for "bargains," i.e., a higher margin of utility. The competition for this group of buyers causes retail stores to make frequent comparisons of prices in other stores, and to try to attract this marginal consumer by advertising, service, window dressing, etc. Many stores have a group of clerks called comparison shoppers, who frequent the competing stores and report the prices for similar merchandise. The store may then change its prices in accordance with the reports of these shoppers, in an attempt to undersell competitors. The following announced selling policies of various stores illustrate this tendency:

**YOU DON'T HAVE TO PAY CASH!**

Do you want a new Fur Coat or Cloth Coat or Dresses? Come to BLANK FURRIERS' Greatest August Sale...make your selections...pay a small deposit...take your purchases home with you...and pay for them while you are enjoying their use through the famous BLANK Unique Payment Club, the only one in New England! No delays, no investigation, no inconvenience!

**NO CHARGE FOR STORAGE ON FUR COATS OR CLOTH COATS PURCHASED NOW!**

*A Small Deposit Reserves Your Selection*

until wanted in the fall, then pay cash . . . open  
a charge account . . . or pay 1/10 each month  
while wearing your coat on our convenient

**BUDGET PAYMENT PLAN**

*We endeavor (though we are not infallible) to sell our merchandise at least six per cent cheaper than we could if we did not sell exclusively for cash. This is the keystone of the store price policy.*

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It is the store's endeavor to provide merchandise of quality, with courteous service and the convenience of charge accounts, at prices as low as they could be if we inconvenienced customers who prefer to charge by requiring currency on each purchase.

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**EVERY-DAY  
MONEY-SAVING  
POLICY:**

*Cuts the cost of every-  
thing you buy here!*

- NO Costly Fixtures
- NO wasteful "services"
- NO charge accounts
- NO expensive "frills"
- NO complicated systems
- NO high pressure selling
- NO elaborate showplaces

**BUT**

- A home-like common-sense store that saves you money at every turn
- Operated on the principle of smaller expense, less profit, therefore lower prices
- A clean pleasant store with a happy contented store family to help you
- A store that is PROUD to be known as "the bargain store of America"

*elbow room*

Wide aisles.

Plenty of people in them, but no crowded feeling; a lot more elbow room than elbows. People behind the counters who seem glad to see you. (They are.) Things on the counters and in the cases that look as though they ought to cost more than they do. Good light—clear light; neither down-stage glare nor upstage mystery. Just a wide-awake and agreeable place to shop. (It even *smells* agreeable.)

**Installment Buying.** The growth of installment buying is considered by many persons as an abuse of business, particularly in the field of wearing apparel, which is not a long-time investment. Since wearing apparel is attractive to every one, there is a temptation to buy on the installment plan more clothes than one can



A SALESROOM IN AN UP-TO-DATE APPAREL STORE

afford. This is particularly true with regard to luxury articles such as fur coats and jewelry.

Unless installment selling is considered from certain standpoints of service to the consumer, it is highly undesirable from an economic standpoint. In applying the test of service to the consumer in any particular case, the following is a composite of the standards of judgment suggested by those who have studied the problem with care. The article in question should be :

1. In the class of necessities of clothing or wearing apparel, or other commodity, rather than luxuries.
2. Of sufficient value to be beyond the reach of the resources of the purchaser on the basis of cash or ordinary credit.
3. Of sufficient permanence to outlast many times the period of payment.
4. One which will not tax the purchaser beyond his resources for its upkeep.

Most authorities agree that if these tests are satisfactorily met, the dangers of the installment plan will be avoided — for the

buyer, the seller, and the economic health of the nation as a whole.

**Effective Salesmanship.** In analyzing the attitude and movements of a successful salesperson of wearing apparel you will find the following :

1. The salesperson notices an approaching customer and greets her with a pleasing, alert look, and at the same time observes the



EXPERT SALES SERVICE

wearing apparel of the customer as well as her figure. The salesperson should be able to classify her customers as to style qualities.

2. Salespeople should always appear busy, not gossiping with other salespeople, but studying the stock, arranging apparel, etc. As soon as a customer arrives, the attention should be centered on the customer.

3. A salesperson should know the selling points of the wearing apparel she is selling. These selling points should be expressed in simple, attractive, and not too common terms or phrases. It is a good plan to develop the sales vocabulary by trying to think of possible expressions relating to the wearing apparel, beginning with different letters. The good salesperson tries to avoid common expressions, such as "sweet," "dear," etc.

4. Care of the stock — dusting, rearranging, and inspection — affords an excellent opportunity to become familiar with all kinds of merchandise. Stock should be kept in a fresh, attractive, salable condition in order to secure sales. Damaged, soiled, or dusty merchandise is never purchased, and does not add to the good name of the store.

5. It is important to have a customer in a pleasing frame of mind. A tired, nervous, restless customer finds it hard to make a decision and leaves the store without buying. Hence the value of all conditions in the store conducive to ease, calmness, quietness, etc.

6. A good salesperson of wearing apparel, after a careful style analysis of the customer, will find it is not necessary to show many garments before the sale is completed.

7. The good salesperson does not antagonize customers with questions that create irritation or weariness. By presenting or showing the customer a series of garments suited to her, it is possible by her comments to secure her ideas on the apparel.

8. One should be careful not to judge a customer exclusively by her style of dress. Many people consider simple dressing a sign of refinement and taste.

### QUESTIONS

1. Compare the relative merits of the two common methods of exchange.
2. Justify the economic existence of the middleman.
3. Outline a typical organization for a mill-marketing department.
4. Clearly define the function of the factor.
5. Distinguish between a jobber, commission merchant, broker, converter, and wholesaler.
6. What operations may a converter perform upon various textiles?
7. Clearly differentiate between the three basic methods of distribution.
8. How may a buyer in Tulsa, Oklahoma, obtain information concerning the latest fashions in the eastern style centers?

9. What is meant by dry goods?
10. What are the advantages of selective distribution to the manufacturer?
11. In marketing merchandise what factors must be considered?
12. What are the responsibilities of a trading agent?
13. What qualifications must a buyer possess?
14. How can the cost of distribution be reduced?
15. What factor determines the cost of selling?
16. What does the term *market* mean?
17. How may a market be established?
18. How are prices established?
19. What evils may arise from a monopoly?
20. What is meant by *marginal utility*?
21. Describe the various grades of cotton as quoted in commodity markets.
22. What is meant by "city crop"; by linters?
23. What other factors are considered when raw cotton is purchased?
24. Who are the various buyers of raw cotton? What service does each perform?
25. Justify a true speculator.
26. Distinguish between a speculator and a gambler.
27. Defend trading in cotton futures.
28. Detail the functions of each of the various channels through which cotton cloth is marketed from the mill.
29. In what manner is wool marketed differently from cotton?
30. How are American wools classified?
31. Clearly distinguish the various grades of wool.
32. What is responsible for shrinkage in wool?
33. In what way does the financing of the wool trade differ from the financing of the cotton trade?
34. What is meant by *conditional weight*?
35. How is silk measured as to size?
36. Explain the trading on the raw-silk exchange.
37. What function does the clearing association perform?
38. What does hedging consist of? Explain its importance in the raw textile field.
39. What important factors govern success in the textile merchandizing field?
40. Explain the common procedure followed in mark-up and mark-down in the average retail store.
41. What are the characteristics of a successful salesperson?

## CHAPTER VIII

### INTERNATIONAL TRADE

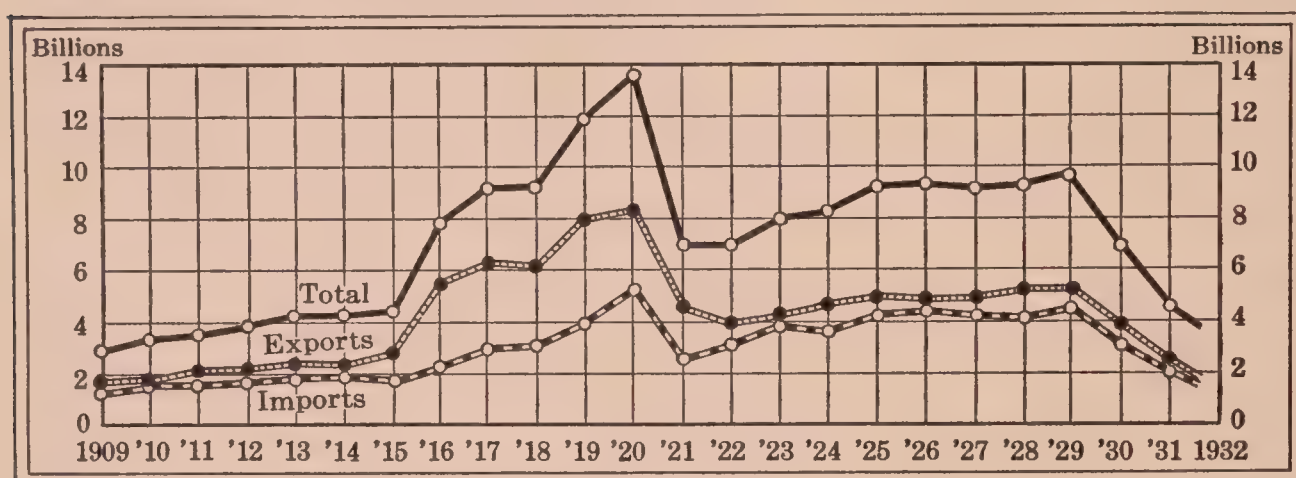
**Definition.** As the result of differences in geographic location, climate, and natural resources, we find that the products and industries of countries vary greatly. There is somewhat of a natural division of labor, by which each country develops the industries and products most suited to the environment and to the workers. We have noticed a similar division of labor, in a more detailed form, in the development of specific trades and crafts as opposed to the older method of every man supplying all his own needs. A natural result of such specialization is a system of exchange, whereby one can dispose of his surplus product in exchange for the other commodities he desires. When such trade takes place within the confines of a single country, it is known as domestic trade. Exchange of products between different countries is called foreign trade.

The products sent out from a country are called the *exports* of the country and those products brought into the country from other nations are called *imports*. In order that people of each country may share in the textiles produced all over the world, we find an extensive development of international trade in the various fibers, completed cloth, etc. Thus each country has, through special conditions (climatic advantages, standard of living, trained labor supply, etc.), tended to become more efficient in the production of one type of textile products. We find that Japan excels in the production of silk; Lancashire, England, excels in the production of fine cotton cloth; the United States and India produce most of the raw cotton used.

**Importance.** Because of the special advantages of each country, competition from other countries is not effective with regard to these textiles. It is not easy to cause Japanese silk growers to migrate to England, and it is difficult, if not impossible, to reproduce in Japan the climatic condition of natural humidity that

makes Lancashire most suitable for the manufacture of fine cotton. Therefore it is not practical to raise silk in England or to make fine cotton in Japan. The countries are not in a position to compete effectively with each other; it is more profitable for each to specialize in the product best suited to its environment and labor supply.

Again, the advantages of centuries of skill may give to one nation a superiority that cannot be overcome by another nation. Thus



COURSE OF AMERICAN FOREIGN TRADE IN RECENT YEARS

France has a style superiority in fabrics that it is impossible for other nations to meet on an equal price basis. This special advantage gives to France immense profits and effectively prevents competition in certain products.

**The Balance of Trade.** As in all trade, we find that exchanges between foreign countries require that other commodities of equivalent value must be given in return for the commodity received. Thus the imports into any country must be paid for either by an equivalent value of exports or else by the payment of enough gold or silver to cover the difference in value. If a country exports more goods than it imports, we say that the balance of trade is favorable. That is, other countries must send either gold or silver in return for part of the goods they have received from that country. If the country imports more goods than it exports, then the balance of trade is unfavorable, and money must be sent out of the country to cover the deficit in the commodity values.

Since the amount of gold in any country is limited, it is obvious that no country can continue indefinitely to import more goods than it exports. Such a condition would soon result in bankruptcy

for the nation. Of course, the country may render part payment in the form of services — such as shipping, banking services, etc., — but ultimately the value of exported commodities combined with services rendered must be equivalent to the goods and services received from other countries. Thus every country must realize that in order to sell its products to other countries, it must be prepared to buy the products of those countries. Hence in America, we should become accustomed to and educated to the value of foreign-made textiles and cloth, and not be prejudiced against them. Certain textiles, such as French silks, fine English cottons, etc., are most artistically manufactured and are worthy of more use in this country. If we wish to sell our cotton and other products abroad, we must expect to import other commodities from foreign countries.

Payments for imports are made through bills of exchange. Thus when an exporter of laces from Switzerland sends a shipment to an American importer, he does not receive payment directly from the importer. Instead he makes a draft on the American importer for the amount due him and gives the draft to a local Swiss bank for collection. The Swiss bank gives him the money, and receives credit on its books from the American bank, to which the American importer pays the amount due. Actually, no money is sent across the ocean for this individual transaction. Gold is shipped only to make up the deficit in the total balance of imports and exports. Drafts on certain English banks and others are accepted the world over, just as drafts on New York banks are accepted over the whole of the United States.

**The Linen Trade.** Various countries have been able to specialize in the manufacture of a certain textile fiber or fabric. To illustrate: In Russia there is a large linen industry, although her linens, with the exception of Russian crash, are hardly known outside of her own boundaries. Belfast, Ireland, has long been credited with being the natural home of the linen industry. No place in the world outside of Ulster produces fabrics of such pure whiteness as can be seen any day spread upon the green fields of counties Antrim and Down. The art of weaving and finishing linen tissues seems to belong to the Irish people by natural inheritance, and the water and atmosphere supply the peculiar properties essential to turning

out the various lines of snow-white goods that have given Belfast world-wide celebrity. In England the industry is mainly confined to Leeds and Barnsley, while in Scotland the principal centers are Dunfermline and Dundee.

The fabrics and articles produced in these three countries are of the most varied character, including cream and bleached table damask, holland, buckram, glass cloth, butcher's linens, toweling, elastic canvas, lace, handkerchiefs, etc. In the production of sheetings and shirtings Belfast occupies a unique place, leading the world. Holland and Belgium pay attention principally to plain goods, such as cambric, lawn, pillow and sheeting linen, etc. In Austria and Germany there is an immense production of linens of all classes, second in volume only to that of Ireland and Scotland. German linens ordinarily are lighter in weight, less clumsy, and altogether more sightly than those of Ireland and Scotland. German weavers make a specialty of cheap table damask and damask towels with knotted fringe and colored borders; they also turn out large quantities of attractive damasks in silk and linen. In Germany all the lowest and the highest grades of linens are woven on the hand-loom; the medium grades are woven on the power-loom. The reason for this is that the yarns of the inferior goods are too weak to stand the strain of the power-loom, and as labor is cheap in Saxony it is possible to produce them by hand at a very low cost. The higher grades are hand-woven for the reason that the work progresses so slowly that hand labor is more economical.

France enjoys the reputation for producing the very choicest linens in the world. They are woven on power- and hand-looms. French damask, in particular, is noted for its excellent quality and its peculiar silky feel, characteristics due solely to the fine quality of raw fiber used and its skilful manipulation. The damask is not subjected to the usual finishing operations to improve its appearance. Being neither pounded nor pressed, it shows the natural round thread and lusterless surface that characterize linen when first removed from the loom. While the French product is not nearly so sightly nor so showy as the damask of Belfast, Dunfermline, and Bielefeld, it possesses the peculiar feature that the longer it is used the softer and more lustrous it becomes. The luster of Irish, Scotch, and German damask is produced, in the

main, by the pressing process, and being artificial it disappears to a great extent the first time the cloth is laundered.

**The Cotton Trade.** American cotton is in great demand in foreign countries because of its general excellence and the low price level. England particularly buys much cotton from the United States. India cotton is preferred by China and Japan, but occasionally when Asiatic cotton is of poor quality, or there is a small yield, the demand for American cotton becomes great in the Far East as well as in England. Russia raises its own supply of cotton. The Texas and far-west cotton is most popular for export purposes.

Egypt furnishes to the United States a high grade of cotton that does not compete with American cotton. Egyptian cotton is long in staple and remarkably fine, smooth, and glossy, approaching — but not equaling — our own Sea Island cotton in these respects. The fiber is strong and takes dyes with unusual brilliance and permanence. These qualities particularly adapt it for the manufacture of hosiery, for which purpose it is largely used both in this country and in Germany.

In length of staple Egyptian cotton ranks between the average Upland and Sea Island cotton. It is fine, but its particular value lies in its superior strength and elasticity and its remarkable development of twist, enabling it to cling together and make a very strong, fine yarn. When obtained in good condition, it has a fine luster and is soft and oily to the touch. As it is used in the production of a grade of fabrics that Upland and Sea Island cotton do not enter into, it consequently does not compete directly with them. It is used chiefly (either combed or carded) for the production of fine yarns. These yarns are used in the better grades of hosiery and knit goods, and for mixing with wool and silk. It is also used in making fine thread for laces, and is especially adapted for mercerizing.

The direct importations of Egyptian cotton increased from less than 200,000 pounds in 1884 to more than 43,000,000 in 1896. Since the latter date the importations have fallen off somewhat, but this decline has been due to the shortage of the crop in Egypt rather than to lack of demand.

Considerable amounts of Egyptian cotton are imported through various European countries. The price of such cotton ranges

higher than that shipped direct from Egypt. The requirements of the knit goods industry and the demand for a quality of goods that can be made only from Egyptian cotton seem likely to maintain or even increase the demand for this grade.

Egyptian cotton consumed by the United States mills usually goes into goods manufactured for the rubber, thread, mercerizing, and fine goods trades, according to a preliminary report on foreign-grown cottons used in the United States. It is estimated that about 55 per cent of the Egyptian cotton consumed in 1931 went into goods for the rubber trade, 25 per cent into goods for the thread trade, and the remaining 20 per cent into goods for miscellaneous trades.

During the year 1931, although the consumption of Egyptian cotton was lower by about 50 per cent in total number of bales than in 1930, the reduction in the consumption of cotton varying in staple length from  $1\frac{1}{16}$  to  $1\frac{1}{4}$  inches was slightly more in proportion than the reduction in the quantities of cotton  $1\frac{3}{8}$  inches and above in staple length. During 1931 the mills manufacturing fine goods strove to keep their production in line with their sales, and this may account for some of the reduction in the use of extra long staple.

Because of strikes, changes in styles, the general business depression, tariff, and the attempt of mills to keep their production in harmony with their sales, it is inadvisable to draw definite conclusions about trends in the use of Egyptian cotton. There has been an increase in the amount of Egyptian growths used during the last few years due to the experimentation of American mills in an effort to improve their product or reduce their cost of production.

India ranks next to the United States in the production of cotton. The country is warm and very thickly populated, and cotton is naturally the fabric used for everyday wear. Through centuries of experience, the Hindus have developed a technique for spinning and weaving very fine cotton fabrics and also hand-block printed cotton fabrics. They have woven muslins of airy lightness with the aid of hand spinning and weaving devices. Extraordinary efforts have been made by the English to extend the cultivation of cotton throughout Asia.

In addition to India, Egypt, and the United States, there are several other countries especially suited to the growth of the cotton plant, where large crops are annually produced. Among the most prominent are the following: Brazil, Mexico, Peru, West Indies, China, Japan, Java, Sumatra, Greece, and Turkey. Peru produces a peculiar variety of cotton with a strong, rough, crinkly staple, usually  $1\frac{3}{8}$  to  $1\frac{5}{8}$  inches long, known as "vegetable wool." It is used by manufacturers of hosiery for mixing with wool, and is difficult to distinguish from the latter fiber except by chemical tests.

In commercial importance cotton exceeds all other staples, the fiber furnishing the best material for clothing the larger portion of the human race in comfort and at low cost. It is the only textile fiber that may be gathered and immediately spun and woven, without any mechanical or chemical process of preparation. The properties of cotton strongly recommend it, especially in comparison with flax, for clothing both in hot and cold countries. Flax has in some respects the advantage in that it forms a smooth, firm, and beautiful cloth, and is very agreeable to wear in warm climates. Because of its power to absorb moisture and give it off by evaporation, it naturally feels cool to the touch. But it is less comfortable than cotton and less conducive to health in extreme heat or extreme cold.

The manufacture of cotton had its origin in the far East, where the climate renders a light and absorbent fabric a suitable clothing for the people. It has, in consequence, been long established over every part of Asia, although it was only in India that cotton was manufactured extensively with a view toward export to foreign lands. The difference between ancient and modern India cotton goods appears to have arisen, not from any diversity in the nature of the fabric produced in that country, but from a change in the tastes and wants of the nations with which India has traded.

The implements used by the Hindus in the different processes of cotton manufacture, from the cleaning of the fiber to its conversion into the finest muslin, may be purchased for a few dollars and are of so crude and simple construction as to be evidently the invention of a very early period. With the exception of the loom, none of them deserves the name of a machine or displays the

slightest mechanical ingenuity. The finest and sheerest cotton fabric produced in the world is made, even at the present time, with implements as primitive as the flint of the prehistoric races. The Dacca muslin, sometimes called the "woven wind of India," still constitutes the most perfect specimen of a woven cotton fabric that can be found. Yarn has been spun upon modern machinery that is finer than that from which this muslin is made, but no tissue so perfect in all respects has yet been woven upon the powerloom. In making these fine muslins, the cotton fiber is separated from the seed by the use of a bow of bamboo strung with rawhide; it is carded with the bone of a fish; twisted into thread by the use of the distaff; and woven on a primitive loom made of bamboo reeds. The well-managed finger and thumb of the Hindu spinner, patiently and carefully applied to the formation of a thread, and the moisture at the same time communicated to it, are found to have the effect of arranging the fibers of cotton more perfectly than can be done by our most improved machinery.

Between this pre-historic type of work and the great factory of modern times there can be found but two really original inventions: namely, the method of extending the strand of cotton by the revolution of rollers, applied first by Arkwright little more than a century ago, and the invention of the saw-gin by Eli Whitney in 1792. All else in the great factory is but an evolution of devices as old as history. Changes have occurred by the score in the detail of each machine, but not in the substitution of new machines upon a different principle.

The great perfection attained in cotton manufacture and its wonderful development within the past century are due to the inventive skill and untiring energy of the mechanics of the United States and England. Compared with the inventions and improvements introduced by English and American inventors, those contributed by other nations are insignificant and scarcely worthy of mention. While the English were the first to use power machinery for spinning and weaving, the Americans have made many inventions that have facilitated and cheapened cotton manufacture. All of the American methods of any merit have been adopted in England, and all English improvements have been introduced into America. This interchange of the inventive skill

of the two countries has been going on for more than a century, so that at this time neither can boast of any especial advantage over the other in patented machinery. England has undoubtedly done more than any other country toward putting cotton into various manufactured products suitable for the different peoples of the earth. She has also created vast shipping interests, without which much of our raw cotton could not have been sent abroad for consumption. In the annual consumption of raw cotton Great Britain ranks first, the United States second, followed by France, Germany, and Russia.

The manufacture of cotton goods in Europe is said to have been first begun by the commercial cities of Italy before the discovery of the passage to India by the Cape of Good Hope.

England has always purchased cotton from the United States, but during the Civil War, 1861–1865, the supply was cut off, and England then made attempts to extend the cultivation of cotton among her colonial possessions and parts of Asia.

The following account will show how textile products are exported to the Orient. Texas and Oklahoma in 1931 furnished the world with one-fourth of its supply of raw cotton. In seven and one-half months, more than 4,000,000 bales of cotton, or two-thirds of our total cotton exports, sailed out of Texas ports for various parts of the world. Nearly half of it went to the Orient. In addition, nearly 2,500,000 bales were in storage in Texas ports.

The transportation cost to land a bale of Texas cotton in Shanghai or Bombay or Kobe, halfway around the world, is less than the cost of delivery to a South Carolina mill. The freight on a bale of cotton from Houston to Shanghai, some 10,000 miles, is less than it is from Dallas to Houston, under 300 miles, which shows that the cheapest transportation in the world today is the power-driven vessel on the high seas.

Over a hundred years ago, Thomas Jefferson said that the way to encourage purchasers is to multiply their means of payment. In this country in 1928–1934 we have adopted the opposite policy. The close of the War found the world deeply in our debt. During the ten years following the War, we did a very large export trade, mostly on credit — thus further enlarging the indebtedness of the rest of the world to us. When our economic situation

commenced to show strain and stress in 1928 and 1929, we suddenly discontinued further foreign credit. This then threw our foreign customers on their own resources to pay for their purchases from us and the interest on what they owed us.

Only two means of payment were open to them, the shipment of gold and the shipment of goods. Except for France, we already had most of their gold. As for payment in goods, we promptly closed that method by the passage in 1930 of the Hawley-Smoot Tariff Act, carrying the highest rates of duty ever put into law in this country. In 1934 the policy was changed so as to allow European countries to pay their debts by the shipment of goods.

Although in recent years American cotton has encountered increasingly sharp competition from foreign growths, yet according to reports the United States is not in any danger of losing its world supremacy. A study of conditions indicates that even with world consumption low in 1930-1931, and foreign growths cheaper in the main than domestic growths, proportionate use of American cotton dropped only slightly. While quality and grade greatly affect consumption, world business conditions represent one of the most important factors bearing on the foreign use of American cotton.

Many forces have been pushing down the price of cotton in recent years; namely, overproduction, seeming indifference to quality, competition of foreign growths, business conditions, etc. Overproduction can be remedied, quality can be further improved, and these are of major importance. There is no doubt that prices will be relatively greater in line with consumption.

**The Wool Trade.** The geographical location of a country has much to do with its use of a textile. Cotton is used in the warm countries, while wool is used in the cooler climates. Wool furnishes the most important material for clothing in all cold and temperate climates, and next to cotton represents the most important of all textile fibers used by mankind. From the earliest times it has been employed in the production of felt and cloth. The testimony of ancient writers goes to prove the high antiquity of woollen textures. For ages before the invention of spinning and weaving, the fleece-covered skin of the sheep was undoubtedly worn as a garment, as in the case of Elijah's mantle.

Wool is one of the most ancient articles of international commerce. In the Middle Ages it was by far the most important of all the exports of England. It is, indeed, an article of production in every civilized country in the world, and also in many countries that are only partly civilized. Wherever agriculture is pursued at all, or wherever there is pasturing, sheep are kept. The sheep of the world are many more in number than are all the cattle, horses, hogs, and goats together. Many countries in which modern manufacturing methods are unknown, and in which even domestic manufactures are but crude and scanty, raise wool and use it as a means of obtaining goods produced by the more advanced countries.

The great wool-consuming countries of the world are the United States, Great Britain, France, Germany, Belgium, and Russia. The United States has for many years depended mainly upon its own supply of this fiber, though our use of foreign wools is constantly increasing.

The first settlers in the American colonies of Virginia, Massachusetts, and New York either brought sheep with them or they were brought with the earliest importation of supplies from the native land. With furniture and household equipment came the loom and the spinning-wheel. The matrons of the household were weavers and the daughters spinners. The clothing of the country people was largely of domestic manufacture from wool grown on the farm. The sheep were mainly from the countries of the settlers — England and Holland. It is said that the first sheep brought into the colonies landed in Jamestown, Virginia, in 1609. Settlement was slow and the increase in the number of sheep moderate, but in 1649 the number in Virginia was reported as 3000. There were early importations into Massachusetts, and by 1640 the number of sheep was estimated at 3000. The Dutch brought over sheep to New Netherlands in 1625, and a Swedish colony brought 80 sheep into Delaware in 1663.

All the colonies introduced flocks and encouraged the domestic manufacture of wool. In 1645 Massachusetts enacted a law for the encouragement of the raising of sheep; and in 1656 a law was passed requiring each family to spin three pounds of wool, cotton, or flax per week for thirty weeks in a year. In the same year a skilled weaver, induced by a gift of thirty acres of land, settled in

Lowell, Mass., and this city has since become a great center of textile industry.

Today the number of sheep in the United States is over 40,000,000. They are raised on open ranches and this causes a high labor cost for herding.

New Zealand, consisting of two long narrow islands, is an ideal sheep country, with excellent shipping facilities. The climate is very uniform, so that green grass and pastures are available all the year. This results in a well-grown, superior grade of wool, with rapid mutton development. The flocks are about 1100 in size and handled by general farmers.

Italy has intensive agriculture and a growing industrial area and therefore can not afford to devote much land to sheep raising. Those that are raised, numbering about 12,000,000, are found in the southern parts and on the adjacent islands. France had, a generation or so ago, large numbers of sheep, but they have now dwindled to 14,000,000. Germany has the finest wool in the world, and while the number of sheep is small, there is a movement to increase the supply. Ireland produces a coarse, heavy wool. Russia supplies a large amount of wool in Europe. This wool is of many varieties. Spain was once a prominent wool-raising country. Its product was of the finest kind — merino wool — but production has declined. Spain exports much wool to France.

Most of the wool raised in Asia proper is very coarse, suitable only for carpets and coarse clothing. Turkey uses most of her wool for her carpet factories. Japan, because of its limited area, will never be a sheep-raising country. China raises much wool that is coarse and is used for American carpets. India is rapidly developing into a wool-raising country. The government is making an attempt to improve the stock and also to increase the pasture land. The wool is sent to Liverpool, England, where it is sold at auction.

In Africa, Cape Colony and Natal are good wool-raising countries. The economic conditions of the people often compel them to shear the sheep twice a year. The wool is used for fabrics and lace, because the fiber is very thin. Egypt raises very little wool, and that is of very poor quality. It hardly pays to shear the sheep. Attempts are being made to improve the stock.

Most of the wools in England are bought direct from the farmers, while the Irish wools are bought by English wool merchants from small storekeepers through the country towns. The storekeeper pays the farmers in seeds, potatoes, etc. The wool is often bought and sold at auction in the warehouses of London, Liverpool, and Bedford. Rags or remanufactured wools are often sold at auction in England.

Due to sheep diseases, under-feeding, and other handicaps, there is very little sheep-raising in Canada.

In South America there are various high-grade forms of sheep-raising. The sheep in Uruguay are kept in paddocks of large area which reduce the cost of herding. Argentinian sheep-raising has ceased to increase because of the fact that more money can be made in raising beef than sheep. The islands about Chile are excellent grounds for sheep-raising and develop a high grade of wool for hosiery.

England has been the source not only of fine cottons, worsteds, and wooleens, but also of rugs, laces, velveteens, etc. In addition, England has specialized in men's clothing and has become the style center of men's wearing apparel. Hence much of the best wearing apparel for men is exported from England.

Dress and upholstery trimmings are made by the cheap peasant labor of Germany and France and are exported to the United States.

Furs are imported in the raw from Canada (otter, sable, mink, beaver, marten, seal), Russia (sable), Persia (lamb), Liberia (squirrel). The United States exports a large quantity of finished fur garments.

**The Silk Trade.** China and Japan furnish the bulk of the world's supply of raw silk.<sup>1</sup> The United States imports from Japan in 1931 amounted to \$205,399,000, as compared with \$279,113,000 for 1930 and \$431,872,000 for 1929. The trade in raw silk in 1931 amounted to \$162,921,000, about \$62,000,000 less than in 1930 and almost \$200,000,000 less than the raw silk imports in 1929. But these declines are held to be entirely due to conditions resulting from the depression.

It is one thing, holds the Japanese commercial attaché's office, for a comparatively small number of individuals to say that they will

<sup>1</sup> See Chapter X for further details of silk production.

not buy a certain country's or a certain manufacturer's products, and another thing for them to carry out their threat when it affects their pocketbooks adversely and runs counter to their personal desires. Sentiment may affect a few, but the mass of people will continue to buy the Japanese goods they like and find it to their economic advantage to purchase. Wearing garments of silk and drinking Japanese tea are habits which are not easily broken.

The United States has taken from 80 to 90 per cent of Japan's total exports of raw silk, and Japan gets over 50 per cent of our exports of cotton. While American imports from Japan have held more or less to the low levels reached before the Sino-Japanese situation developed in Manchuria and Shanghai, Japan's imports of certain of our products have increased. This is notably true in the case of cotton. During December, 1931, Japan imported 31,696,000 yen of American cotton, whereas in December, 1930, her imports of the same commodity amounted to only 21,637,000 yen. The increase in raw cotton imports, both in December and in January, was explained by the commercial secretary of the Japanese Embassy, Ya-suto Shudo, as being due, not to munition manufacturing needs, but to the low price of American cotton and the use of gold credits previously established in this country by Japanese firms.

While the United States does not import much silk cloth from Japan, the Japanese have successfully placed on the market a variety of Japanese silk, soft and wavy in texture and thicker than the ordinary hand-woven tissues of the far East. In width it ranges from 12 to 44 inches and is of various grades, the finest qualities being suitable for any purpose to which silk can be put. In the American market it is used chiefly in the form of handkerchiefs and as plain and printed dress silks, underwear, and night-robcs. Ordinary habutai has two strands in each of the warp threads and the same number in those of the weft. Occasionally three strands are used, in which case the quality of the goods is greatly improved, and the texture is correspondingly heavier. Very cheap habutai is woven of coarse threads composed of but a single strand. As a rule, in this grade the weft is beaten up so slackly that the cloth "pulls" on the slightest pressure.

Habutai is woven on hand-loom, which are in many cases still in their primitive condition, but are also found provided with modern

improvements. Being constructed of pure undyed silk and carefully woven, the fabric possesses much luster and that peculiar softness to which it owes its name. Besides luster and softness, habutai silk is characterized by evenness of texture and comparative lightness. It has been used by the better classes in Japan for everyday wear for about 250 years, a test sufficient to give it a good standing among Western nations.

Because France has for centuries, through governmental interests and the influence of the nobility, been the style center of the world, it is only natural that it should export much expensive wearing apparel of all kinds. In addition, France also exports beautiful manufactured silks of both printed and woven designs and fine wools and worsteds. Artificial flowers are made in France by children.

Under the impulse of fashion and luxury, lace has received the stamp of the special style of each country. Hence, more or less lace or hand-work fabrics are exported from several countries, particularly Belgium, Ireland, Italy, Switzerland, and France, as well as cheaper grades from America and China. Embroideries are also imported from China and Japan, Switzerland, Germany, and Scotland. Up to 1828, beautiful lace and embroidery were done by hand, but with the invention of machinery it was possible for two persons to do much more than a dozen experts by hand, and the amount of worsted embroideries done by hand has been reduced to five per cent of its former amount.

**The Leather Trade.** The term *kid* is shoe-leather made from the skins of mature goats. The skin of the young goat or kid is made into the thin leather used for kid gloves, since it is too delicate for general use in shoes. The goats which supply the leather used in this country for women's and children's fine shoes are not the common, domesticated variety known in this country, but are wild goats or allied species partially domesticated. They are found in the hill regions of India, the mountains of Europe, portions of South America, etc.

There are from six to eight recognized kinds of goatskins that are imported from all over the world. The Brazilian, Buenos Aires, Andean, Mexican, French, Russian, Indian, and Chinese goats are a few of the many kinds that are known as such. The skin of each

particular species of goat hides has its own peculiarities of texture. The thickness and grain differ according to the environment in which the animal has been raised. It is peculiar that those goats raised in cold climates do not have as thick skins as those raised in warmer climates. The long, thick hair apparently takes the strength from the skin.

We may wonder where all the skins come from that are made up into glazed kid, mat kid, and suede. The great portion of the skins are goatskins. These are almost all imported from abroad, where the animals are slaughtered and disposed of much the same as we dispose of beef and veal here. Sheepskins and carbarettas, the hides of animals that are a cross between sheep and goats, are also used.

The finer grades of kid and goatskins, which are tanned in large quantities in New England, come from the Far East. In China there are two great ports from which skins are shipped — Tientsin and Shanghai. Back in the interior, starting from about 1200 miles from the sea, collectors make their rounds twice a year. The breeder of goats kills his flock just before the collector is due, skins the animals on the hillside, preserves the meat for food, and makes his way to the station with the kidskins, which have been partly dried and wrapped in a bundle that is carried upon the back, or upon a pack animal. There may be as many as fifty breeders awaiting the coming of the collector, who pays them the market price of the skins.

Whenever the collector has a sufficient supply to make it profitable to ship, he bales the skins and sends them over the thousand-mile journey along the river to the seaport. From Tientsin or Shanghai they are taken by tramp steamers, which reach eastern ports by way of the Suez Canal. On the trip the steamers make several ports, so that it is from six to ten weeks before the skins reach America. Another method of importing is to have the raw material shipped across the Pacific and then transferred to a railroad, but the difference in cost to the manufacturer is so great that this method is unprofitable. The goatskins from China are rated as among the finest in the world, and when tanned they make the highest-grade shoes.

Mocha skins come from Tripoli, Arabia, and Northern Africa. In those places the method of collection is practically the same as

in China. The two best-known grades are the Hodieda and the Benghazi. They derive their designations from the exporting cities. Hodieda is located in the southwestern part of Arabia on the Red Sea, while Benghazi is in Barca, one of the provinces of Tripoli.

Other goatskins are produced in India and Russia. Millions of skins are exported annually from Bombay, Madras, and Calcutta. These skins are not brought directly to America, but are transshipped at Marseilles or London.

The jobbers in Europe or India occupy a unique position, for according to their practice it is almost impossible for them to suffer financial loss in dealing with an American tanner. The latter, when he wishes to arrange for his year's supply of raw material, negotiates with an agent in Boston, with whom he signs a contract for so many skins. Then it is necessary for the tanner either to purchase his supply with money equal to the face value of the invoice or to borrow money for letters of credit from Boston banking houses that have European connections.

Before the skins are exported, the jobber has his money from the European banking concerns, and the bills of lading are forwarded to the Boston bankers. The latter turn them over to the tanners, and when the occasion requires, they obtain from the tanners what is known as a deed of trust.

All goatskins are tanned by the same chrome tanning process, whether the finish is to be glazed or mat. The proportions of chemicals vary according to the texture of the skin, and according to the grain.

**Rugs.** Rugs and carpets as well as wool are imported from Persia and Turkey. Among people of good taste, oriental rugs or carpets are prized far above machine-made products, due to (a) skill in manufacture, (b) beauty and novelty of pattern, (c) rich and harmonious colorings. In addition, the rugs are the most desirable in the world because they are built knot by knot, slowly and carefully. In addition, the wool is raised from sheep that are carefully looked after and housed so that the texture of their fleece is the finest.

Many attempts have been made to imitate oriental rugs, but without success. No machine has ever been invented which can

give the twist to the yarn and tie the square knots which are peculiar features of the hand-made fabrics. The native Persian or Turk has from early youth acquired a technique in making rugs. These methods are considered constant as religious habits and have been handed down from father to son. Inhabitants of Turkey, due to their mode of living and their religious habits, have developed special ability in making rugs of durability and artistic design.

The cheaper grades of floor rugs are made on power-looms in England and the United States. Those made in the United States are artistic and can be sold very reasonably. They are popular in all the markets of the world.

**The Tariff.** Tariff is a word derived from the name of the town Tarifa in Spain. This town received its name from Tarifa Malek, a Saracen chief, who landed at this point on the coast in the year 710. During the Moorish domination, all vessels which passed through the Straits of Gibraltar were at Tarifa compelled to pay duties or tribute to the savage chief; whence the word *tariff*. As used at present, the word indicates a list of goods with the specified duties or customs to be paid upon them, either upon importation or exportation. In the United States there can be no duties imposed on exports; our tariff duties must all be laid on imports. *Ad valorem* is the duty or tariff measured by the net value of an invoice of goods. *Ad valorem* duties are levied according to the market value or worth of goods at the original place of shipment, as sworn to by the owner and verified by the customs appraisers. *Specific* duty is the duty or tariff levied by units of measurement, *i.e.*, the number or quantity, as dozen, gross, or ton.

To show the effect of the tariff on textiles and clothing let us consider as an illustration the effect on silks.

To view the development of the silk industry in a broader light, the silk manufacture has grown in America under the tariff from almost nothing to tremendous proportions, while during the same period it has actually decreased in England under free trade. Thus in the United States the value of manufactured silk increased from \$6,600,000 in 1860 to \$583,000,000 in 1921, while the number of employees rose from 5000 to 126,000. Importations of manufactured silk amounted to about \$33,000,000 in 1861, and have

remained about constant. Thus the home manufacturers have supplied the greater demand due to increased population and higher prosperity.

In Great Britain, however, there was an import duty till 1861; upon the removal of that duty the imports of manufactured silk rose from £6,000,000 in 1861 to £13,000,000 in 1911, but silk manufacture there decreased so greatly that where it employed 116,000 in 1861, it had only 37,000 in 1901.

In 1913 the United States consumed as much raw silk in manufacturing silk goods as France, Germany, Italy, and England put together. Similar results have been obtained in other textiles.

We have seen that with the development of the steam engine in the early part of the 19th century England began to develop the manufacture of practically all commodities, particularly textiles. The statesmen of the 19th century — Cobden, Peel, and Gladstone — convinced the English people that England should become the greatest workshop and factory center of the world, and that her future lay in the expansion of foreign trade. England had the equipment and skill which would enable her to manufacture textiles, etc., cheaper than anybody else. What she needed to do this work efficiently was low-priced foods and low-priced raw materials. To secure these it was necessary to have no duties on imports — no tariff — and freedom to enter all foreign markets. This meant that she wanted no tariffs abroad. In order to secure this concession, it was necessary for England to allow all countries to import into England free of duty. This policy was developed and England became the richest nation of the world, as money poured in from all sides.

The United States was settled at first by English people, who transported their industries to New England, which naturally became a textile center. After the middle of the 19th century, when the textile industries began to develop, it was necessary to protect the American products from the competition of the English mills. The government finally passed bills at different times imposing duties — tariff — on imported textiles. As a result of this tariff, the textile industry developed enormously in size and wealth. Prior to and after the World War, all countries began to learn to use power machinery — particularly spinning and weaving machines.

They had learned from war the value of developing a standard of self-sufficiency, particularly for the necessities of life, such as food, clothing, etc. In order to carry out this policy, each country began to keep out the products — particularly textiles — of England and other countries, and to preserve its own markets for its own people. The policy has developed until today practically all countries of the world have set up tariff regulations.

Russia, with her governmental trade monopoly, allows nothing to enter from abroad except the specific articles which it desires and can not produce at home. Lest this restriction prove ineffective, the Soviets have so reduced the purchasing power of the Russian people that they could not buy anything foreign even if they had a chance. In 1934 they began to make trade treaties with the United States.

Spain and the United States have made their tariffs so high that they tower above all others, and neither country shows any marked disposition to lower them. All the countries of eastern Europe are trying their best to emulate these leaders, and France, Germany, and Italy are not far behind. Only Great Britain, Belgium, the Netherlands, and the Scandinavian countries on the Continent are still striving to keep tariffs down to a trading basis.

The ultimate outcome of a policy protecting home industries is to shut out all foreign goods that compete with home products. This in turn means the elimination of foreign trade, with each country confining its efforts to supplying the home market without foreign competition. While this plan may succeed with regard to the cheap and medium grades of textiles and other products, it will be impossible for each country to make the finest qualities of all kinds of wearing apparel. We have already seen that there are certain countries that, due to natural and labor conditions, excel in certain products. So there will always be an opportunity for the development of trade in foreign raw materials and the finest grades of textiles.

Of course the elimination or reduction of the foreign business in textiles will affect certain branches of the textile trades, particularly such as the cotton trade, which has grown to world proportions. This would require an all-around readjustment of workers and industries.

Many successful business men feel very strongly that high tariffs tend to diminish international trade and cause a general depression. They point out that Australia placed a high tariff in order to increase revenue and also to protect home industries. It did neither, and producers found they gained little by the high schedules of the tariff.

Many business men feel that the ideal tariff is one which would afford protection to an industry as long as it is conducted efficiently. When the difference in production-costs of foreign and domestic textiles prove that domestic commodities are excessive in price, then the industry or trade is not, in their opinion, entitled to protection.

The industrial history of the United States shows that the subject of the tariff has been before the country for over a century. One political party has favored a tariff for revenue only, and to assist as few industries as possible. The other party has advocated a high tariff to protect all our industries.

Experience shows that high tariff regulations, in the long run, tend to :

1. Raise the general price level of labor and raw materials.
2. Cause a reduction of imports, which reduces the purchasing power of other nations and decreases our exports to an extent proportional with the decrease of our imports. (The total amount of imports and exports should tend to be nearly equal.)
3. Create a gain in employment in the home consumption industries that is offset by the loss of employment in the import industries.
4. Cause foreign countries to develop discriminatory tariff legislation against the nation with a high tariff.

If the United States is to prevent tariff restrictions against its foreign trade, it must be prepared to make certain concessions. We can not continually bar European products from the American market, while claiming a right to trade abroad. The only fundamental means of preventing discrimination against our products is by reducing the tariff.

Between the years 1798 and 1923, the United States adopted the policy of tariff bargaining, by which we agreed to keep certain articles on our free list (without duty) if, in return, the other

country promised to admit free or at low duty certain or all imports from the United States.

The international trade of a country is influenced by favorable tariffs and by depreciated currencies in other countries.

In 1932 United States' trade with Great Britain began to decrease. While Britain is buying progressively less from the United States, the United States is buying progressively less from Great Britain. During 1931 Great Britain bought goods to the total value of £104,171,028 (about \$519,000,000 at par) from the United States, which was only slightly more than half as much as during 1929. The United States, however, bought British goods to the total value of £25,112,212 (about \$125,561,060), which was considerably less than half of the 1929 purchases.

Depreciated sterling and tariffs are resulting in still further reduced purchases of American goods by Britain. Britain is buying, where possible, from countries which also have depreciated currencies, and in addition she is making at home many articles on which recently imposed prohibitive tariffs have made the foreign article more expensive than the domestic product. The government's policy of "buying from those who buy from us" has nothing to do with restricted purchases of American goods. The import trade remains a strictly business proposition. British importers buy where they can get the most for their money. It now happens that in many cases they can buy more cheaply from countries with depreciated currencies.

During the first nine months of 1931 Britain bought slightly less than 12 per cent of all her imports from the United States. During the last quarter, after the gold standard was suspended and sterling had depreciated, more than 13 per cent of all imports came from the United States.

**Admission of Imports.** Importation into the United States can be made only at ports of entry constituted by law. All goods so imported must be entered at a customhouse by presenting a bill of lading, an invoice duly certified by the United States consul at the port from whence they are shipped, and a description of the goods sworn to by the importer. If the goods are free of duty, a permit to land is immediately issued, subject to official inspection and verification of the goods. If the goods are dutiable, the tariff

is estimated at the customhouse and paid in cash. A permit is then issued to send one or more packages to the government appraiser for examination, to determine whether they have been invoiced properly. The balance of the goods is delivered to the importer, under bond to produce them should the examination of the samples show discrepancies with the statements and description. If the appraiser finds the goods to have been undervalued, they are subject merely to the additional tariff on the excess value. Any fraudulent undervaluation involves the confiscation of the goods concerned. Goods may be transported to interior ports in bond, directly from the importing vessel. There are customhouses in all the large cities of the United States.

The establishment of New York as a "free port" with a foreign trade zone, through the passage of legislation now in Congress, is urged by many persons as one means of helping American shipping and port facilities. The principle involved has been indorsed by many branches of the federal government and by numerous business and port organizations throughout the country, including the most outstanding bodies in the New York district. The following will explain the reasons for such an arrangement :

"One method of stimulating use of American shipping and port facilities in the face of a dwindling foreign trade is the establishment of zones in which foreign merchandise may be landed for storage, cleaning, repacking, and other manipulation prior to re-export to foreign countries. This type of port is known as a foreign-trade zone or free port, and is very common in European countries.

"The trade of Hamburg, Danzig, Copenhagen, and other European ports is largely concentrated at the docks and warehouses within their free port zones. As yet no provision has been made to legalize the establishment of such zones in the United States.

"The service *via* New York is usually more frequent and superior as to type of vessel. Through the use of optional bills of lading it is possible for the shipper to send a consignment to New York and determine upon arrival how much he will transship abroad. The development of the transshipment and re-export business for the benefit of American ports and shipping, in the judgment of the United States Shipping Board which has studied the subject, will be greatly facilitated by the setting up of foreign-trade zones.

Such zones would be legally outside of the customs formalities, involving the use of bonded warehouses, or the present domestic entries followed by claims for drawbacks on re-exported goods. Such foreign-trade zones will be fully policed to insure payment of duty on any of the merchandise brought through the customs barrier into the United States for sale."

**The Bureau of Foreign and Domestic Commerce.** When the layman thinks of the Department of Commerce, he perhaps thinks chiefly of the Bureau of Foreign and Domestic Commerce, which in the United States is an agency for promoting what is considered better business practice, and abroad is frankly and openly a sales promotion agency for American goods. Measured by cost of operation, this bureau is one of the least important, spending only about one-tenth of the amount of money required for the lighthouse service. Measured by its influence, it is one of the most important agencies of the commerce department.

In domestic matters the bureau offers its services to trade associations that ask for them. It can not, despite recent rumors to the contrary, prescribe how much butter shall go into a three-decker drug-store sandwich. It has, however, lent its experts to assist in surveys of the drug, grocery, and other businesses in various localities.

Abroad, it now has a working agreement with the consular service, which has smoothed out many old jealousies and prevented overlapping efforts. It has, at least for the remainder of the present fiscal year, some sixty foreign offices, scattered everywhere on the globe where American merchants sell or hope to sell their goods. Half of these are on the European Continent, a quarter in Latin America, a few in Africa, and the rest in the Far East.

Commerce department attachés, like those of the military and naval services, are stationed at the principal legations and ministries. They investigate general economic situations and specific questions on credit. They protect American trademarks. Calls for help from American merchants and agents all over the earth come in at the rate of 13,000 a day.

**Importance of Our Import Trade.** The United States imports considerable quantities of raw materials for which it must depend almost entirely upon foreign sources of supply. For example, it

uses almost half of the world's supply of tin, while producing but one-tenth of one per cent. We use 57 per cent of the world's supply of silk and 70 per cent of the world's supply of rubber. Manganese, asbestos, and many other products are also necessarily obtained from other countries.

While under pressure of necessity, American industry might resort to substitutes for some of these important raw materials, and science might lessen American industry's dependence on them, through discovery of new substitutes, it would be unwise to expect science to supply this country with substitutes for all the important materials which nature has failed to provide within our own land.

Even if it were possible to exclude from the domestic market all raw materials that could be produced in this country or could be replaced by substitute materials of domestic origin, a radical and expensive reorganization of production methods would be necessary. At the same time, such drastic restrictions imposed on our imports would naturally result in a serious contraction in our exports, since the buying power of foreign nations in terms of goods and services would be materially curtailed.

Interdependence presents a serious problem, and excessive rivalry creates friction and ill will. We must remember that the business men of the world contribute to the development of an atmosphere of international good will; they will minimize whatever fears economic interdependence may produce, and will establish a sound foundation for peaceful world intercourse.

**Suggested Policy for International Trade.** A suggested policy for international trade would be :

First : To initiate a movement for an international economic conference, with a view to : (a) lowering excessive tariff duties and eliminating discriminatory and unfair trade practices and other economic barriers affecting international trade ; (b) preventing retaliatory tariff measures and economic walls ; (c) promoting fair, equal, and friendly trade and commercial relations between nations.

Second : To negotiate with foreign governments reciprocal trade agreements under a policy of mutual tariff concessions. This reciprocity clause should specify that any agreement, treaty, or arrangement affecting our own tariff must first be approved by the

Congress of the United States and shall not become operative until it has been thus approved.

**The Tariff Commission.** The United States feels the need of constant revision of the tariff. The government has appointed a non-partisan commission of three Democrats and three Republicans to study tariff questions. This is called the Tariff Commission.

Its purpose is to conduct investigations under what is known as the flexible tariff provision, Section 336 of the Hawley-Smoot Tariff Act of 1930. This authorizes studies of production costs at home and abroad whenever the commission decides that complaints regarding existing tariff rates are justified. The complaints may hold that the rates are either too high or too low because of changing world conditions or inequalities in the law.

Investigations under this section are made upon (1) request of the President; (2) resolution of either house or both houses of Congress; (3) the commission's own initiative, and (4) application of any interested party. Applications may be made by foreign interests as well as by domestic industries and importers. Requests for investigations by the President or by Congress are accepted as mandatory. From the passage of the Tariff Act of 1930 to June 30, 1932, there were 171 requests for investigations under this section.

All investigations are based upon the differences in cost of production. In each inquiry the commission must determine: (1) the likeness or similarity of the articles to be compared; (2) the principal competing country; (3) the cost of production, together with transportation and other delivery charges to the principal market or markets in the United States. The costs are then compared to determine the proper rate of duty, but no change may exceed a 50 per cent increase or decrease of the rate prescribed by the Tariff Act; no transfers may be made from the free to the dutiable list, or *vice versa*, and the form of duty may not be changed.

As new industrial conditions develop, new tariff problems arise, and new methods of trade control must be considered. At the times of depression, when the values of foreign currencies are unstable and when foreign governments are subjecting their international trade to drastic measures of control, it is necessary that some well-informed agency of government shall follow such changes

and measures in order to be in a position to advise the Congress concerning their effects upon industry and commerce.

The organization of the commission primarily consists of the Washington headquarters and a field service operating in three groups, including the New York office, the European office at Brussels, and the valuation unit — a temporary force in New York.

Under the reorganization of the Commission in 1930 a system was adopted whereby each investigation is handled by a subcommittee of one or more commissioners selected by the chairman. When available, two commissioners are named for each investigation — one a Republican, the other a Democrat. At the conclusion of an inquiry these subcommittees report to the full commission, which in turn passes upon the final report to be made to the President.

The professional, technical, and administrative staff includes twenty units, five headed by the chief economist, the chief investigator, and the chiefs of the economics, international relations, and legal divisions, who assist in all investigations. General service to all investigating units is also supplied by accounting, statistical, and transportation divisions. There are also the following eight divisions of technical experts, based on groupings in the tariff act: agricultural, ceramics, chemical, lumber-paper, metals, sugar, textile, and sundries. These units perform the basic field and office work in securing the primary data for each investigation.

When an investigation is determined upon by the commission, it is referred at once to the appropriate group of technical experts, and, if products of a European nation are involved, to the office at Brussels. Where commodities involve countries in the South American area or in the Far East, it is necessary to send out investigators, as no offices are maintained in these regions.

In the case of American products the investigators obtain their data largely from trade associations and industries, and have found, in general, ready coöperation. In addition to the actual production costs, transportation and other costs, markets in the United States, and other facts that constitute an advantage or disadvantage in competition must be obtained. Such a study requires much research.

In the quest for similar information about articles produced in foreign countries the Tariff Commission makes no secret investigations, but approaches first the governments for permission to deal with producers and trade associations and other agencies. Where foreign products are involved there must also be collected data as to the transportation costs to the principal competitive markets in the United States as well as any advantages granted to foreign producers by a government, corporation, or association.

Under the law, where the production costs abroad are not "readily ascertainable," the commission is permitted to accept as evidence invoice prices or the average wholesale selling prices. There have been instances where such prices, which include the profit of the producers, have been considered sufficiently low to warrant a change in a tariff schedule.

### QUESTIONS

1. How does localization of certain textiles make competition impossible?

2. Why is it valuable to this country for us to become acquainted with French silks and English cottons?

3. In what textiles do the following excel: Ireland, Austria, Germany, Russia, Holland, Belgium, Switzerland, England, France?

4. Discuss the production of cotton in the United States.

5. Compare the suitability of cotton and linen for clothing.

6. How is Dacca muslin made?

7. Trace the history of wool.

8. Name five countries which produce wool and five which do not. Tell why in each case.

9. How are goatskins made ready for market by the breeder?

10. How does the jobber in goatskins protect himself from financial loss?

11. How did England build up her textile industry?

12. Compare the United States and England as to methods of building up trade.

13. What do you think of a prohibitive tariff as applied to the textile industry?

14. Give the arguments for the doctrine of comparative costs.

15. Do you recommend the establishment of a free port zone in the United States?

16. How has the intergovernmental debt question affected trade?

17. Criticize the suggested policy for international trade.

## CHAPTER IX

### MONEY AND CREDIT

**Definition.** We have defined money as a medium of exchange or means of payment. It is valuable because it is accepted by all in exchange for goods and services. While it is not of itself wealth, it is a symbol of the wealth that can be received in exchange for it.

**Use.** While at one time all trading in commodities was carried on by means of barter, such direct trading is now used only in rare instances, as in times of depression when money is very scarce. Thus farmers may exchange produce directly for necessary services or manufactured products. Barter is not practical for general use because it is impossible always to know the exact number of times one article is worth another article. Units of equivalent value are not always available for a transaction. With the introduction of money, it became much easier to carry on trade and to express the value of commodities on a common basis of comparison.

The importance of money to an industry such as the clothing industry is very great. It is used not only by the consumer to purchase the wearing apparel, but also by the producer to buy his raw materials, to pay his laborers, etc. In the case of most manufacturers and traders the transactions involve such large amounts that it is not practical to use actual currency for payment. Instead, transactions are carried on by a system of credit, or on a "promise to pay" basis. There is not sufficient money in existence for all exchange transactions to be carried on by means of cash money payment. If money were required for all transactions in the clothing and wearing apparel industries alone, business would be greatly delayed at every point. The value of credit in facilitating the processes of exchange and the basis for credit will be described in more detail (see page 393).

Money in the popular sense is anything that will buy commodities or services. Under this definition we can include coins, bank

bills, checks, etc. The technical definition for money is that it is the medium of exchange that by common consent meets commercial obligations. When exchange was carried on with wampum, wheat, or other commodities as a medium of measurement, such articles were then money.

In addition to serving as a medium of exchange, money serves as a standard of value — that is, the value of all other commodities can be expressed in terms of money. Money is also valuable as a standard of deferred payment. If a person purchases something on credit, the seller wishes to know in what form the debt will be paid and what its purchasing power will be. Money also serves as a store of value; it does not deteriorate like perishable wealth — grain or textile products, for instance.

**Stable Money.** One of the most important necessities for the business of a country is a stable standard of value in the monetary system. It must be approximately the same today, tomorrow, and in the distant future in order that business may be carried on with a certain assurance. If the standard value of the medium of exchange fluctuates greatly, prices will likewise vary greatly from time to time, affecting the purchasing power of money. The business man must be able to know the cost of his product in order that he may obtain an equivalent value for it in the future. A working man wishes to know that his savings will be worth as much ten years from now as they are today.

In order to obtain this high degree of stability in a money commodity, it is necessary to select some medium of exchange that is relatively constant in quantity, or that does not vary greatly over short periods of time. In general, the following characteristics are required for a commodity that is to be used for money: (1) it must have a value as a commodity, that is, a usefulness aside from its value as money; (2) it must have high value in small bulk, so that it can be easily carried and transported; (3) it must be durable; (4) it must be capable of being divided into both large and small units; (5) it must be of uniform quality; (6) it must be easily recognizable; (7) it must be easily coined; and (8) it must have distinct stability of value due to a certain regularity in production.

**Gold and Silver.** Gold and silver have been found to possess most of these qualities in the highest degree and are now used for

money in almost every country in the world. Most large countries use gold as money, while the Oriental, South American, and some smaller countries use silver. Both gold and silver, like other commodities, have their value raised or lowered as the supply increases or decreases. As the value of gold falls, prices will rise, and as the value of gold rises, prices tend to go lower. The same is true of silver in those countries that use silver.

The production of gold, silver, or any other commodity can not be set by governmental bodies or legislatures. It would be possible only if all the governments of the world were to act jointly and regulate the output of gold per year, tending to prevent any great change in the supply and thus in its value. Then the prices of standard wearing apparel and other commodities would hardly decline or advance, supply and demand then becoming the chief determining factor of value and so of price.

Gold as a standard has, among the many advantages that can not be advocated for other substances, the prime requisite of safety, in that the supply is unlikely to be suddenly increased by any amount that could cause large or sudden fluctuations in its relative value. To illustrate: If an amount of gold equal to the total life-production of any one mine anywhere were suddenly to be added to the world's supply, it would have little or no unbalancing effect upon relative values.

Gold is a safe standard because the cost of mining it plus a fair interest on the capital invested in its production is about equal to its value. While this is true to a very large extent, the fact that there are natural restrictions or limitations to the amount of its production is gold's paramount attribute as a money standard.

**Bimetallism.** Such is not the case with silver or with any other substance which could be used as a standard for money. As for bimetallism, or the use of both gold and silver, it has been tried repeatedly without success. It has been tried with silver; it has been tried with wheat; but prices will not remain stable. We can keep to the gold standard or we can go upon a silver standard, but we can not do both without disaster; and the reasons for the failure of bimetallism are readily apparent. First, during the last 65 years the annual production of silver has varied greatly, but has always been far ahead of the gold production. As a result, no definite

ratio of the quantity (and so of the value) of silver to gold could be maintained for any length of time. With a very few exceptions (notably during the World War) silver has constantly tended to decrease in value with respect to gold. Second, it is a well-established monetary principle that a cheaper money tends to drive a higher valued money out of the market. This principle is called Gresham's Law. This being the case, the more valuable gold would be hoarded, and only the cheaper silver would circulate. As a result, a mono-metallic system would be in operation with the cheaper money as a base.

Furthermore, silver itself is largely a by-product metal. The opening up of any single new large producer would be a disaster to the silver market, as the demands are adequately supplied already from by-product sources, and the few mines that produce silver exclusively do so because of extraordinary richness of the ore. There are tons and tons of silver all over the world awaiting the chance to glut the markets as soon as the price is realized that would recompense for the labor of taking it from the mines.

The gold standard provides a currency system in which the unit of value, be it the dollar, pound, or franc, in which prices and wages are customarily expressed and in which debts are contracted, consists of the value of a fixed quantity of gold in a free gold market.

**Legal Tender.** Any kind of money which the law states must be accepted in payment of a debt is said to be legal tender. The United States has, by act of Congress, proclaimed the following kinds of money to be legal tender: (a) gold coins to any amount; (b) silver dollars in any amount (unless otherwise limited in a contract); (c) gold certificates; (d) United States notes (except for payment of customs duties and interest on the public debt). Federal Reserve and other bank notes are legal tender to the government. Half dollars, quarters, and dimes are legal tender only up to ten dollars, while nickels and one-cent pieces are legal tender up to the amount of twenty-five cents. Actually, any money in the United States will in ordinary times be accepted in payment of an obligation, because of public confidence in the government's promise to maintain it at its face value.

**Fiat Money.** Fiat money is paper money which a government is unable or unwilling to redeem in legal tender coin. It has been

made legal by law, but is not convertible. The Continental Congress currency issued during the Revolutionary War is an example of fiat money in this country. The greenbacks issued during the Civil War were fiat currency for a number of years, but they were made convertible by act of Congress in 1879. There is no fiat money in the United States today.

The history of the money system of every country shows that paper money must be supported or be convertible into legal coin of the country, which is either gold or silver, or else its face value will depreciate. Of course, in times of stress — war, depression, etc., — the country may issue paper without the support of gold or silver. This is usually intended as a temporary measure. While it may be done to a slight degree in times of depression in order to ease the money market, nevertheless prices will automatically rise and a nation will find it is impossible to pay foreign debts. With the increase of fiat money a reduction of purchasing power takes place.

**Inflation and Deflation.** If we think of our gold dollar as a yardstick of value, and represent the value or purchasing power of this dollar over commodities at wholesale in the year 1926 by a length of 36 inches — that is, a yard — the length of this yardstick of value would have been as follows for the dates specified :

1896.....	77 inches
1913.....	52 inches
1920.....	23 inches
1921.....	37 inches
1929.....	37 inches
March 1932.....	55 inches

When the yardstick shrinks, we have inflation, the rising cost of living, and excesses in speculation ; and when the yardstick expands, we have deflation, depression, and unemployment. Inflation helps the debtor at the expense of the creditor, the exporter at the expense of the importer, the speculator at the expense of the man with a fixed income, the capitalist at the expense of the laborer. Deflation, on the other hand, works just the opposite. Both inflation and deflation are bad.

**Demand and Supply.** Since money is to be valued not for itself alone but for what it will do, it is possible that we can have too much

money when there is little money work to be done. Similarly, we can have scarcity of money if there is much money work to be done. Like any other commodity, money may be cheap or dear. Its value (in terms of purchasing power) is determined by the law of supply and demand. If the supply of money — that is, the amount of money and the rapidity of its circulation, and the use of credit — is greater than the demand, then its value will be low and prices will naturally rise. On the other hand, if the demand for money is great, — because of a large quantity of commodities, such as textiles and wearing apparel, that are produced and sold, — then the value of money will be great and prices of other commodities will fall. For instance, suppose a yard of broadcloth woolen fabric is worth \$5 during normal times. Let us assume that for some reason the demand for money itself (not commodities) becomes great. Obviously it will then be necessary to offer more than one yard of the same material to induce a person to part with \$5. Thus if two yards are given, the price of the material has fallen one-half, and the cloth is worth only \$2.50 per yard because the money is twice as valuable. But if the demand for money decreases, increasing the supply, the yard of cloth becomes more valuable than the money and its price will rise proportionably.

**Quantity of Money.** There are in circulation in the United States about \$5,500,000,000. This consists of various kinds of paper money and of coins of silver, nickel, and copper, which the national government is obliged by law to maintain at a parity with gold. About 90 per cent, however, of the total volume of business in the United States, which in a normal prosperous year amounts to something like a trillion dollars, is performed by bank deposits circulating by means of bank checks.

Our bank deposits normally amount to over \$50,000,000,000, of which about \$25,000,000,000 are payable by check. This volume of checking deposits circulates in a normal year, through check payments, on an average of thirty to forty times. Yet the value of every dollar of our paper money and the value of every dollar payable by bank check is equal to the value of a gold dollar. Hence anything that affects the value of the gold dollar affects the value of all money with which this tremendous amount of business is being done and in which all of our debt obligations are expressed.

**Credit.** Credit implies permission to use another's money or capital, and carries with it the right of the owner of the capital to receive it back at some future time together with interest. The purpose of credit is that the one who borrows may use the capital to better advantage than the one who loans. To illustrate: A mill sells a large quantity of sheeting; the payment is delayed, but the mill receives a written promise to pay. This credit is necessary in order that the purchaser may have time to sell part of the sheeting and thus receive funds to pay the manufacturer. The promise to pay is called a *note*.

Credit is based upon the promise to pay (either implied or expressed) and its sole purpose is to save the use of money. In business today we find six forms of credit: (a) book credit, (b) promissory note, (c) the bank check, (d) draft or bill of exchange, (e) trade acceptance, (f) bank notes and government notes.

**Book Credit.** Most textile houses offer customers the privilege of purchasing various items during the month, each item of which is recorded in a book, and once a month a statement of the amount owed is sent to the customer and a check or cash is returned to cover the amount of the account. Such a method is called book credit, and saves the use of money by postponing the time of payment to an early date in the following month.

\$ _____	New York, _____	19 _____
_____ after date _____ promise to pay to		
the order of _____		
		_____ Dollars
at _____		
Value received _____		
Due _____		

#### PROMISSORY NOTE

**Promissory Note.** In the book credit there is a verbal understanding or contract, but in many cases, particularly where the amount of each item is large, it is advisable to have a written

agreement entered into by both parties. Such a written agreement is called a promissory note, and the one who issues the note is called the *maker* and the party who receives is called the *payee*. The note promises to pay for value received a sum of money on a certain day in the future. The promissory note saves the use of money by postponing the payment to a future date, and also allows the payee to sell the note to a third party by writing his name or endorsing the note in favor of the one who buys it, called the *endorsee*. The note may pass by endorsement through many hands.

No	New York, _____	193 _____
<b>Textile Trust Company</b> <sup>1-110</sup> <small>350 BROADWAY</small>		
Pay to the order of _____		\$ _____
		Dollars
<small>PAYABLE THROUGH NEW YORK CLEARING HOUSE</small>		

### BANK CHECK .

**Check.** Practically all bills or accounts are paid by check, that is, a written order (by one, called a *depositor*, who has an account or sum of money to his credit in a bank) on the bank to pay on demand to a third party, called the *payee*, the sum written on the check. The check, like the note, may by endorsement pass through many hands before reaching the bank for final payment. The check also saves the use of money.

**Draft or Bill of Exchange.** In case the payment, or exchange of money, is to be made at a distant community or foreign country, a more formal paper than a check must be used, called a draft or bill of exchange. If the money is to be paid to one in a foreign country, as in the case of international trade, then a foreign draft or bill of exchange is used. The draft is simply a written statement by which the creditor orders his debtor to pay a sum of money to a third party on demand or at a future date. The draft or bill of

exchange may pass from hand to hand, like the check, and each time it changes hands it saves the use of money.

\$ _____	New York, _____	193 _____
		<i>pay to the</i>
<i>Order of</i> _____		
		<i>Dollars</i>
<i>Value received and charge the same to account of</i>		
<i>To</i> _____		
_____		

## DRAFT

**Trade Acceptance.** A special form of draft or bill of exchange which is very common in the textile business is called a trade acceptance. Practically all manufacturers, wholesalers, and jobbers of wearing apparel must wait some time after they sell the goods before they receive payment. Of course, they would like to receive all or even part of their money on delivery of the goods, but experience shows that they must wait until some, if not all, of the goods are sold to the consumer. This usually requires as long as

No. _____	19 _____
<i>To</i> _____	
<i>On</i> _____	<i>Pay to the order of</i> _____
<i>Dollars (\$ _____)</i>	
<small><i>The obligation of the acceptor hereof arises out of the purchase of goods from the drawer. The drawee may accept this bill payable at any bank, banker or trust company in the United States which he may designate.</i></small>	
<i>Accepted at</i> _____	<i>on</i> _____ 19 _____
<i>Payable at</i> _____	<i>Bank</i> _____
<i>Bank Location</i> _____	
<i>Buyer's Signature</i> _____	
<i>By Agent or Officer</i> _____	<i>By</i> _____

## TRADE ACCEPTANCE

90 days. So manufacturers and selling agents are obliged to extend terms of payment on goods, called credit.

In order that the manufacturer or wholesaler may do business, banks have developed the form of a bill of exchange called a trade acceptance. This allows the manufacturers or wholesalers, on receipt of the goods by the purchaser, to present the trade acceptance when properly signed to the bank and receive credit for the full sum minus the interest on the amount until the date of maturity.

The bank is protected by the buyer's signing or accepting the bill of exchange, in which he promises to pay the bill at maturity. Of course if the buyer fails to pay the bill at maturity, then the bank will demand the money from the manufacturer or the party selling the goods.

A bill of lading or a warehouse receipt may also serve as a credit instrument, being handled similarly to the trade acceptance.

<b>TEXTILE TRUST COMPANY</b>	
350 Broadway New York, _____ 193__	
Mr. _____	Check
A _____	Draft on you for \$ _____ drawn by
	Note
_____ has been regularly presented at your office for payment. It will be held at this office (at the collection window) until close of banking hours this day. (Office closes 3 p.m. Saturday 12 m.)	
Our messengers have no authority to make promises or waive instructions.	
Cash or certified check to order of _____	_____ Messenger
"Textile Trust Company" required	
This notice to be returned to the Textile Trust Company with payment	

#### BANK NOTICE TO DEBTOR

**Bank Notes and Government Notes.** The ordinary bills used as money in everyday life in this country are called bank and government notes, which are founded on the United States of America's promise to pay, and which pass from one person to another as money and represent a form of credit.

**Foreign Obligations.** When one attempts to pay a bill for goods contracted in a foreign country, the difficulties are greater than in paying the bill in the same country. To illustrate: Suppose we

wish to pay the bill of a French mill for delivery of 100 yards of silk at 26.5 francs a yard. We must first consider the currency of each country. The franc is the French and the dollar the United States unit. The franc is equal to a certain weight of gold and the dollar is also valued at a certain weight of gold. If the American dollar were to be changed into francs, the dollar would be worth about 15 francs. That is, there is as much pure gold in a French franc as there is in 6.66 cents of an American dollar. This equivalent is known as the mint par of exchange, or the mint par. It is around this figure that the price of the franc, in terms of cents, will fluctuate.

In paying the above bill in gold, the American would have to send to Paris gold to the value of \$397.88. But the amount of gold to be sent to France will cost him more than \$397.88. There is the additional expense of assaying to determine its purity, plus the cost of packing, freight, insurance, and the loss of interest on the gold while in transit.

If it is possible to purchase a draft on Paris, similar to the purchase of a draft between two cities in the United States, and the cost of the draft is less than the cost of shipment of gold, then of course the draft will be purchased. Therefore the cost of shipping gold, called gold points, limits the amount to be charged for the draft to France. The merchant will select the method that is the cheapest, unless the government prohibits exporting of gold or discourages the export of gold by placing obstacles in the way of the exporter.

**Banks.** Since money is loaned and credit obtained through the medium of the banking system of the community, it is desirable to understand the organization and functioning of that system.

The capital fund available for purposes of loan depends in a large degree on three factors: (1) the productiveness or earning power of the people, (2) the thrift of the people, and (3) their desire or willingness to save. In other words, the available loan fund represents the savings of those persons who deposit their surplus money in the bank. The bank is then enabled to allow others to borrow these funds.

Banks were first established in the industrial cities of northern Italy during the Middle Ages by money lenders who safeguarded

## RATES OF FOREIGN EXCHANGE

Quotation on sterling represents dollars and decimals of a dollar; all others represent cents and decimals of a cent.

Parity of the exchanges in the following tabulation is based on the new gold value of the United States dollar as established by Presidential proclamation on Jan. 31, 1934.

<i>Europe</i>		YEAR AGO			YEAR AGO
Sterling — Par \$8.2397 per sovereign.			Portugal — Par 7.4831 cents per escudo.		
Demand . . . \$5.08	\$3.45 $\frac{5}{8}$		Demand . . . 4.67	3.18	
Australia — Par \$8.2397 per sovereign.			Rumania — Par 1.0127 cents per leu.		
Demand . . . 4.06 $\frac{3}{8}$	2.76 $\frac{5}{8}$		Demand . . . 1.02	.60	
South Africa — Par \$8.2397 per sovereign.			Spain — Par 32.6693 cents per peseta.		
Demand . . . 5.10	3.48		Demand . . . 13.63	8.49 $\frac{1}{2}$	
France — Par 6.6335 cents per franc.			Sweden — Par 45.3740 cents per krona.		
Demand . . . 6.58	3.96 $\frac{3}{8}$		Demand . . . 26.20	18.44 $\frac{1}{2}$	
Germany — Par 40.3325 cents per mark.			Switzerland — Par 32.6693 cents per franc.		
Demand . . . 39.72	23.87		Demand . . . 32.31	19.68 $\frac{1}{2}$	
Italy — Par 8.91112 cents per lira.			Yugoslavia — Par 2.9820 cents per dinar.		
Demand . . . 8.57	5.12		Demand . . . 2.28	1.35	
Belgium — Par 23.5419 cents per belga.			<i>Canada</i>		
Demand . . . 23.31	14.10 $\frac{1}{2}$		Montreal — Par \$1.693125 per Canadian dollar.		
Austria — Par 23.8244 cents per schilling.			Demand . . . 99.87	86.12	
Demand . . . 19.00	14.05		<i>Mexico</i>		
Czechoslovakia — Par 50.0165 cents per crown.			Mexico, D. F. — Par 84.40 cents per silver peso.		
Demand . . . 4.16	2.97 $\frac{3}{4}$		Demand . . . 27.90	29.00	
Denmark — Par 45.3740 cents per krone.			<i>Far East</i>		
Demand . . . 22.68	15.49		China — Cents per silver dollar for Hongkong and Shanghai.		
Finland — Par 4.2642 cents per finmark.			Hongkong —		
Demand . . . 2.26	1.52		Demand . . . 39.19	22.94	
Greece — Par 2.1973 cents per drachma.			Cables . . . 39.25	23.00	
Demand . . . .94 $\frac{1}{4}$	.57 $\frac{1}{16}$		Shanghai —		
Holland — Par 68.0567 cents per florin.			Demand . . . 35.19	29.44	
Demand . . . 67.27	40.59 $\frac{1}{2}$		Cables . . . 35.25	29.50	
Hungary — Par 29.6125 cents per pengo.			India — Calcutta: Par 61.7978 cents per rupee.		
Demand . . . 29.62	17.45		Demand . . . 38.31	26.19	
Norway — Par 45.3740 cents per krone.			Philippine Islands — Manila: Par 50 cents per silver peso.		
Demand . . . 25.53	17.79		Cables . . . 50.37	49.75	
Poland — Par 18.9938 cents per zloty.					
Demand . . . 19.00	11.18				

	YEAR AGO		YEAR AGO
Java — Par 68.06 cents per florin.		Demand . . . .	8.50
Cables . . . .	67.50	40.50	7.45
Chile — Par 20.5990 cents per gold		peso.	
Japan — Par 84.3957 cents per yen.		Cables . . . .	10.25
Demand . . . .	30.06	20.94	6.12
		Colombia — Par \$1.6479 per gold	
		peso.	
		Cables . . . .	72.00
		88.50	
		Peru — Par 28 cents per sol.	
		Cables . . . .	25.00
		16.25	
		Uruguay — Par \$1.7510 per gold peso.	
		Demand . . . .	80.00
		47.25	

South America

the money of neighbors in their strong compartments, called safes. The money lenders found by experience that (a) their neighbors usually left a large part of their deposit on hand and seldom drew out all their money, and (b) that it was possible to lend a part of this money for short periods, provided they had a reserve sufficient to meet the everyday demands. The money-lenders or bankers also found that it was possible for them to issue notes — bank notes or promises to pay on demand — on the security of the amount of money on hand. They also found that many people would not ask to have these notes redeemed, but would circulate them. Hence the money-lenders or bankers could determine approximately the amount of reserve to keep on hand to meet payment of notes and to pay depositors. Gradually arose the custom of allowing depositors to draw checks on banks against the amount of their deposit on hand. Thus arose the main functions of banking: (1) receiving deposits of money, (2) loaning money, (3) issuing bank notes or promises to pay the value of notes when presented.

There are today many types of banks. We may classify them according to (a) source of authority and regulation or (b) kind of business transacted. The first classification divides banks into National banks or State banks according to their source of power. The National banks secure their authority from and are supervised by the United States Government. The State banks secure their charters from the State authorities.

According to the type of business transacted, State banks may be divided into (1) savings banks, (2) trust companies, (3) commercial banks, (4) investment banks, and (5) private banks.

**National Banks.** Shortly after the formation of our government the first Secretary of the Treasury, Alexander Hamilton, saw the need of a bank to: (1) regulate the currency, (2) receive deposits from the public, (3) act as an official agent of the government in financial matters. Hence in 1791 the Bank of the United States was established in Philadelphia with branches in other parts of the country. It had a capital stock of \$10,000,000, of which \$2,000,000 was held by the government and the rest by the public. The bank held a charter for twenty years.

The charter was not renewed in 1811, due to the crisis of the War of 1812. Its value and importance, however, were readily recognized so that a second bank was chartered in 1816. After a very slow start, the Second Bank became successful and flourishing. It became a political issue, and fell into the disfavor of President Jackson, who refused to renew its charter in 1836. Thus ended a most stabilizing influence in early American financial history.

As the country was in the midst of a very prosperous business era, and banks were a recognized necessity, numerous State banks were immediately organized. Unfortunately many of the proprietors of these banks were inexperienced, and all too often their intentions were not exactly honest. There developed the period of "wild-cat" banks, ending in the panic of 1837. Then followed a period of well-regulated State and private banks, many of which survive to the present day.

During the Civil War in 1863, a number of National banks were formed, patterned in part on the old national banks. In fact, any five people could organize a National bank on the following conditions: (a) One-third of the capital must be invested in government bonds. The bank was allowed to deposit the bonds with the government and receive against them National bank notes equal to 100 per cent of their value. Thus the banks receive interest on the bonds and also circulate the bank notes. (b) The banks are subject to examination by government inspectors and stockholders are subject to double liability on the amount of stock held.

The following list of services of the larger National banks will illustrate the scope of their influence in the carrying on of business:

(a) Deposits are received, subject to withdrawal by check, and monthly statements are rendered of such accounts.

(b) Approved commercial paper is discounted for customers and loans are made on satisfactory collateral at current interest rates.

(c) Notes, drafts, coupons, and other items are collected, both in this country and abroad, for the account of customers.

(d) Individuals, firms, corporations, and trustees may place temporarily idle funds in certificates of deposit, on which interest is paid from the date of deposit to the date of withdrawal.

(e) The credit department provides information to customers concerning the credit standing of business concerns in any part of this country.

(f) Saving deposits may be made, beginning to draw interest at the end of each month.

(g) Safe deposit service, with modern vaults for the protection of valuables and securities, is maintained.

(h) They offer facilities for the prompt and efficient handling of every phase of international banking business — such as commercial letters of credit, acceptance financing, foreign collections, foreign exchange, foreign credit information, and close relations with foreign banks.

(i) They issue letters of credit, under which drafts may be negotiated throughout the world, making it possible to cash drafts at foreign banks. This is the best way to carry substantial sums.

**Notes and the Discount Function.** A promissory note is a paper signed by the borrower promising to repay money borrowed (called the face of the note), stating the rate of interest, to whom payable, and the time and place of payment. Notes are due at the expiration of the specified time.

The rate of interest varies at different times and in different parts of the country. The United States government usually has to pay about 2 per cent or 3 per cent. Savings banks pay 3 per cent or 4 per cent. Individuals borrowing on good security pay from 4 per cent to 6 per cent.

In order further to secure the safety of the loan, the borrower, called the maker of the note, often has a friend approve or endorse by signing his note. The endorser must usually own property, and if the maker can not pay the note at the end of the specified time, the endorser is notified by written order, called a *protest*, and is called upon to pay it.

A borrower is asking a great deal when he asks another man to sign a note for him. Unless a person has more money than he needs, it is better business policy to refuse the favor. It is wise always to be sure that one knows exactly what he is signing and understands the responsibility attached.

**Workings of a Bank.** As previously explained, a depositor leaves money at the bank for safe keeping. The bank agrees to return a part or all of the money on demand. The bank may under certain conditions credit the depositor's account with any interest that has been earned.

The following outline covers the workings of a National bank :

(a) Merchants deposit in the bank their receipts of each day. With a slip of paper marked to show the contents of the deposits, the money with the slip is presented at the bank window. The teller or clerk compares the amount received with the record on the deposit slip. If correct, the amount deposited is entered in a depositor's book called a pass book and held by the depositor.

(b) The amount of the deposit slip is credited by the bank book-keeper to the account of the depositor.

(c) The depositor pays his bills by checks drawn on the bank. (The bank gives each depositor a book of blank checks.) Each

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#### AUTHORIZED SIGNATURES OF

Account No. \_\_\_\_\_

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The depositor agrees that all dealings and relations with the Trust Company shall be governed by the rules and regulations set forth in the pass book.

ADDRESS

BUSINESS

#### TEXTILE TRUST COMPANY

350 BROADWAY, NEW YORK, \_\_\_\_\_ 193

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#### DEPOSITOR'S SIGNATURE CARD KEPT BY THE BANK

check is made out with the (a) amount, (b) date, (c) name of the person to receive the money, and (d) signature of depositor, or payer of the check.

**Check.** The check is used by the depositor to pay some bill or account. It is either cashed or deposited by endorsement on the reverse side by the person who receives it. The check finally reaches the home bank of the depositor, where it is charged against his deposit and kept on file until the end of the month, when the depositor's account is balanced and paid checks returned to the depositor.

This pass-book will be used only as a receipt for deposits, and is not to be balanced, and need not be left for that purpose; instead a statement of your account will be rendered with your canceled vouchers.

The right is reserved to require five days' notice prior to withdrawals of deposits.

All items with the exception of currency are received for deposit and credit, subject to payment and collection and drafts against same are payable in current funds through the New York Clearing House.

## TEXTILE TRUST COMPANY

KINDLY ADVISE US PROMPTLY  
OF ANY CHANGE OF ADDRESS

NOTICE ON PASS BOOK COVER

DEPOSITED IN

## Textile Trust Company

350 BROADWAY

BY

NEW YORK \_\_\_\_\_ 193 \_\_\_\_\_

All items deposited except currency, are received subject to collection and payment and the conditions printed in the depositor's pass book.

Until actual payment is received by this company all items credited may be charged back to depositor's account.

	DOLLARS	CENTS
<i>Bills,</i>		
<i>Coin,</i>		
<i>Checks,</i>		

DEPOSIT SLIP

**Clearing House.** Checks drawn by a depositor are frequently offered for deposit at a bank remote from the place of business of the issuing bank; not infrequently they are mailed to distant cities. It is apparent that if it were necessary to return the check directly from the bank receiving it to the one upon which it is drawn, considerable expense would be involved in the operation. To complicate matters further it must be borne in mind that often millions of checks totaling billions of dollars are offered for payment

daily throughout the country. To facilitate the rapid and accurate handling of such a heavy volume of business, banks in a neighboring area, usually a large city, organize what is known as a Clearing House Association. Only highly reputable banks are permitted to enter, and the standards for continued membership are rigidly enforced.

The operation of the clearing house is very simple. Each member bank in a district is given an identifying number which appears upon the face of every check issued on that bank. At the conclusion of the day's banking business, all checks are sorted in piles according to the bank of issue. Naturally checks drawn upon the accounts of its own depositors are immediately charged to the individual's account. If funds are sufficient to meet the check, proper entries are made, and the check is canceled and filed in the bank folder of the depositor who signed the original check. If drawn upon a branch bank, it is sent to the office of that branch and handled as above.

There remain the checks drawn upon other banks, all sorted in piles. These are totaled, bundled, and the next morning at a stated time, usually about 10 o'clock, a representative of that bank, with his assistants, appears at the clearing house with all the bundles. Each bank has a small office, occupied by the bank's representative. These offices are usually arranged in a large semicircle and in numerical rotation according to the clearing-house numbers of the banks. At a signal, the assistant begins to distribute to each of the other banks the packages of checks he has for them, accepting a receipt for the total supposed to be in the bundle. This operation is completed in a few minutes for all the banks. The two representatives then inspect the checks and verify the total for which they have signed. Let us assume that bank No. 1 had checks totaling \$100,000 for bank No. 2, and that the latter had a total of \$80,000 for bank No. 1. Obviously bank No. 2 owes bank No. 1 a total of \$20,000 for that day's transactions. A clearing-house check for that amount is given No. 1 at once, and the clearing is complete. The clerks now return to their own bank and proceed to charge each check to the proper account. In case a check must be returned for any reason, as insufficient funds, forgery, improperly drawn, errors, etc., the check is stamped

with the reason for return and passed back at the next clearing, being handled as a regular transaction in the opposite direction. Banks in New York City clear twice daily.

Checks drawn upon banks in other cities are transmitted by the clearing house to the clearing house in that city for collection. In cases where a bank is not a member of the clearing house, a member bank usually agrees to be its correspondent and accept responsibility at the clearing house for its checks.

**Bank Reports.** Each bank issues a financial statement at stated times. The following will assist one in interpreting a bank statement :

1. The capital of a bank is the amount raised by the sale of its stock to stockholders. The cash is called assets and the bank owns the capital stock. What the bank owes are called liabilities.

2. The bank does business in a building with proper equipment and furniture. It would naturally buy the furniture and equipment and in some cases the building from the cash assets, and the real estate, furniture, etc., become assets, and the remaining cash becomes a cash reserve fund.

3. As each new depositor places his deposits, the sum total of deposits becomes a liability, since they must all be repaid in due time.

4. As each check is received and cashed, the deposits become less as the amount of each check is subtracted.

5. As the bank loans money or discounts notes, the assets are increased by the amount of loans and discounts, while the amount of discount is placed against liabilities as undivided profits.

6. As securities are bought with cash reserve, the assets are credited with securities.

7. As soon as the discount amount is increased sufficiently, a certain portion is set aside as surplus, not to be divided to stockholders, but retained as a capital reserve.

**Weakness.** The National bank system, organized in 1863 for the purpose of providing a market for government bonds and also to create a uniform currency, was safe but lacked flexibility. In other words, in times of crisis the banks were unable to stand together, and it was difficult to increase the supply of bank notes when needed. Each National bank attempted to secure as much

cash as possible in time of crisis, and this was reflected in shifting bank deposits and business. To correct this weakness the Federal Reserve bank was established in 1913, as the foundation stone of our National bank system.

The Federal Reserve bank is a system of member banks controlled and supervised by the Federal Reserve board. It is not a

### TEXTILE TRUST COMPANY NEW YORK

#### STATEMENT OF CONDITIONS MARCH 31, 1934

##### *Resources*

Cash on Hand and in Federal Reserve Bank . . . . .	\$8,073,291.05	
Cash in Depositary Banks . . . . .	3,401,764.57	
United States Government Securities . . . . .	9,827,954.63	
Municipal and Other Readily Marketable Short Term Obligations . . . . .	5,908,601.55	
Demand Collateral Loans to Brokers . . . . .	3,858,043.19	
Loans Eligible for Rediscount with Federal Reserve Bank . . . . .	4,000,000.00	
Other Demand Loans with Collateral . . . . .	3,478,564.84	
Loans and Discounts . . . . .	15,447,369.69	
Loans on Real Estate . . . . .	911,315.74	
Investments:		
Federal Reserve Bank Stock . . . . .	\$195,000.00	
Other Investments . . . . .	862,214.66	1,057,214.66
Banking House, Vaults, Furniture and Fixtures . . . . .	820,312.35	
Accrued Interest Receivable and Other Assets . . . . .	199,928.54	
Customers' Liability on Acceptances . . . . .	803,608.49	
		<u>\$57,787,969.30</u>

##### *Liabilities*

Capital Stock . . . . .	\$3,000,000.00	
Surplus and Undivided Profits . . . . .	2,728,049.85	
Reserves . . . . .	189,757.25	
Acceptances Executed or Endorsed . . . . .	847,563.09	
Deposits:		
Demand . . . . .	\$48,826,766.02	
Time . . . . .	2,195,833.09	51,022,599.11
		<u>\$57,787,969.30</u>

#### BANK REPORT

bank in the strict sense of the word, but a super-bank for banks to do business with and not for individuals.

The country is divided into twelve banking districts. All National banks must belong and State banks and trust companies

are invited to become members of the system. Membership is granted by paying cash into the treasury of the local Federal Reserve bank to the extent of 6 per cent of the member's capital and surplus.

The Federal Reserve bank in return (*a*) lends credit to member banks in the form of Federal Reserve notes, (*b*) serves as a depository of the gold money reserve of the country, (*c*) acts as a clearing agency for their members, (*d*) is a custodian of government funds, (*e*) deals in bills of exchange, bullion, and governmental obligations.

By rediscounting — one of the great privileges of belonging to the Federal Reserve system — a local bank may increase its credit by discounting at the district Federal Reserve bank the promissory notes, drafts, bills of exchange, etc., that it has accumulated from the various business men to whom it has extended credit. The district Federal Reserve bank will discount these papers at a slightly lower rate than the member bank had done, and pays for them Federal Reserve notes which enable the member bank to make additional loans to its clients. This process is called rediscounting and applies to banks that have reached the limit of their lending power, and where there is a demand on the part of business for additional loans. This system provides for absolute safety and creates a greater flexibility of currency, especially at times when business is brisk and the demand for ready money is great.

**Credit Function.** One of the principal functions of a National bank is the credit function based upon the promissory note of a business house. The note is discounted, and the difference between the face of the note and the discount is credited to the account of the business man. He draws against this account for necessary purchases — as machinery, raw materials, etc. — and is able to pay promptly with a check, and this usually increases his credit rating.

To illustrate: A mill treasurer wishes to borrow \$100,000 for a mill that manufactures gingham. The money is to be used to buy cotton and other raw materials, and to pay the wages of the mill employees regularly each week during the period of manufacturing and selling the product. The note is a contract to pay to the bank

in 60 days the sum borrowed — \$100,000. The mill may offer as security for the loan some of the mill stock, a mortgage on the mill property, or bonds. In case the money is not paid at the specified time, the note may be extended, or the bank may sell the collateral — that is, the stocks, bonds, etc., offered as security.

When the mill treasurer borrows the money, he does not receive the \$100,000, but the balance remaining after the interest at 6 per cent for 60 days has been deducted from the \$100,000 — or a net of \$99,000 — is credited to the mill account at the bank. This is called discounting the note. The \$99,000 credited to the account is called the *proceeds* of the note.

The mill treasurer may write checks for a total of \$99,000 in payment for raw cotton, wages, etc. In addition, the fact that he has a deposit of \$99,000 in a bank gives him a favorable financial rating in the business world, so that firms will sell him machinery and supplies with sufficient time to pay for them.

As fast as the finished fabrics are sold, the treasurer receives checks in payment for them, and deposits these checks to his credit in the bank, so that by the time the note falls due he will have sufficient funds to his credit to repay the \$100,000 by drawing a check to the bank for this amount.

Thus the bank in granting loans also makes credit deposits. Eventually, when the bank is functioning in prosperous times, it loans more money than it possesses. Of course we must bear in mind that not all business men are borrowing at the same time. Many are depositing, so that the bank is obliged in prosperous times to keep only a limited amount of cash on hand to meet the needs of depositors.

Banks also assist mill men, textile manufacturers, and others by collecting for them the checks, bills of exchange, bank drafts, etc. (called commercial paper), that are deposited to their accounts. Of course, the promissory notes, etc., which are not rediscounted at the Federal Reserve bank are kept by the bank until the date of their retirement (date of maturity) and then are presented by the bank to the persons (debtors) for payment.

National banks also have the right to issue bank notes (promises to pay), which are used in the community as money for the purchase of goods. The Federal government imposes definite restrictions

upon National banks as to the amount of bank notes that may be outstanding.

Since a bank must keep on hand sufficient cash to meet the demands of the depositors, it follows that an adequate amount, called the reserve fund, must be kept in every bank. The ratio between this reserve fund and the demand liabilities — that is, cash on hand and the demand deposits — is called the reserve ratio. It is expressed by a percentage obtained by dividing the cash on hand by demand deposits. A ratio of 1 to 5 or 1 to 10 is usually considered a safe ratio. This means that the bank has \$1.00 in its cash reserve for every \$5.00 or \$10.00 (as the case may be — 1 to 5 or 1 to 10) it owes its depositors. The bank's reserve ratio may be expressed in the form of an equation, as follows:

$$\text{Reserve ratio} = \frac{\text{cash on hand} + \text{cash due from other banks}}{\text{deposits} + \text{bank notes in circulation}}$$

When the bank loans textile manufacturers and others money, the credit deposits increase, but the cash does not increase in the same ratio, and this makes the reserve ratio smaller. Raising the rate of discount and limiting the loans will assist the bank to maintain a safe reserve ratio. If business is poor and few loans are being made, the reserve ratio will tend to increase. A bank may also control its reserve ratio by buying or selling securities or by rediscounting its notes.

It is necessary for textile manufacturers and others to provide a continuous maximum supply of textile fabrics and wearing apparel to meet the demands of society. One of the functions of money is to provide a medium of exchange for the purchase of textiles and wearing apparel. Since there is not a sufficient cash medium of exchange to carry out the transactions to meet the needs of society, the banks supply by credit the funds to carry on the business.

Therefore, the amount of money and credit in a community or country must be flexible, expand when business requires more money, and contract when the requirements have decreased, else there will be either not sufficient money or too much money to carry on the exchanges. This means that the prices of textiles and other goods will either fall or rise, affecting certain groups of society to such an extent as to make them suffer.

It follows that the banking system should provide an elastic or flexible system of credit and currency that will expand or contract in accordance with the business needs of the country, so that the price level will remain stable. The National and Federal Reserve banks can do this through the system of loans and rediscounts which has been briefly mentioned previously.

**Rediscounts.** This plan operates as follows: Assuming that business in the textile industry is rapidly advancing, the manufacturers and merchants need to buy more raw materials, supplies, machines, etc. In return for the borrower's notes secured by collateral, the banks will advance lines of credit for 60- or 90-day periods. As more and more commercial paper is being discounted, the ratio of cash to deposits is sinking lower until the legal reserve limit is reached. To make further loans, additional cash reserve is necessary. Under the Federal Reserve system this is secured by the member bank sending some of its discounted commercial paper to the district Reserve bank for rediscount, and the account of the member bank is credited with the equivalent cash. In this way the district Reserve bank renders the same service to the member banks that these banks perform for their borrowers. As the rediscount rate is generally lower than the regular discount rate, such transactions can be very profitable. To supply the cash requirements of their customers, the member bank receives from the district bank Federal Reserve bank notes which are supported by the rediscounted paper.

As business declines, the demand for loans decreases and outstanding loans are gradually repaid. As the rediscounted loans come due, the member bank can repay these by offering either new paper or Federal Reserve Bank notes. By using the latter, the central bank can retire from the currency any excess money then in circulation in response to the general business demands.

The effectiveness of this system was thoroughly tested during the period of violent inflation up to the middle of 1929, and then again through the period of depression that followed. A few minor improvements were suggested by the Congress of 1931-1932. The central banks can effectively control over-expansion if they wish to use their power by raising the rediscount rate to a point where it discourages care-free borrowing.

When all is said and done, the success of any bank or banking system depends entirely upon the honesty, integrity, good business judgment, knowledge of particular business problems, and a wealth of understanding of human nature on the part of the management of the bank. By sacrificing extra profits for assured safety, avoiding questionable business contacts, although venturing further when an enterprise seems reasonably certain of success, a bank can render a most valuable and profitable service to the community and nation.

**Textile Credit.** When the National Bank Act allowed any five people to organize a bank under the government, it was very natural that a group of each industry would organize a bank for its own trade interest, such as a Textile National Bank, Leather National Bank, etc. Each bank would become expert in dealing with the peculiar financial problems of that trade and be able to give better financial service than other banks.

Many of the National banks in the South have helped to finance cotton since 1865, and have always considered it a duty and a privilege to extend their facilities in support of the South's chief product. In 1932 financial support appeared necessary to prevent "dumping," which generally has the tendency further to depress the price. To prevent this unsatisfactory state and aid in the orderly marketing of the cotton crop, and at the same time to release a good portion of the market value of the crop to growers and to their local banks and merchants, the First National Bank of Atlanta and its banking group announced that they would be glad to extend to growers, directly if desired, — but preferably on applications coming through their local bank, — loans on cotton on the following basis :

1. The cotton to be independently stored in warehouses satisfactory to the banks and bearing the approval of the Federal Reserve bank.

2. The banks would lend 80 per cent of the market value of the cotton on tenderable grades only, proper margins to be maintained.

3. Grades and weights of the cotton were to be indicated.

4. The cotton was to carry specific insurance.

5. The rate of interest would be 5 per cent; time, 4 to 6 months.

Such a step is a rather radical departure in American banking practice but clearly indicates that the banks are willing to lead the way to improved business methods wherever they can. This plan will be watched with great interest by all banks and by other industrial groups.

The United States government is very anxious to uphold the credit of our banking system, hence it allows the National banks to issue National bank notes and the Federal Reserve banks to issue Federal Reserve bank notes, but insists on a 10 per cent tax to the Federal government on any notes issued by State banks. This step is necessary, as the Federal government exercises no direct control over State banks. Because of this rather excessive tax the State banks do not issue notes, as it would be unprofitable for them to do so. Our currency is thus completely under Federal control.

**State Banks.** Banks chartered by the State, such as (*a*) savings, (*b*) trust companies, (*c*) commercial banks, (*d*) private banks, — perform many services that are very useful to the community and the trade.

**Savings Banks.** A very useful form of banking is that carried on by the savings bank. Individuals called depositors place their money in a savings bank for safe keeping and for interest. The bank makes its money by lending at a higher interest than it pays its depositors. Interest on deposits is generally paid for specified periods, frequently quarterly or semi-annually, although in recent years many savings banks have paid interest from date of deposit to withdrawal. The interest is generally at a conservative rate, fluctuating with business conditions. Often in the same community there may be a slight variation in the rate of interest paid by different banks.

Every bank is obliged to open its books for inspection by special officers who are appointed for that work. If these men did their work carefully and often enough, there would be almost no chance of loss by depositing money in a savings bank. Banks fail when they lend money to too many people who are unable to pay it back, or when the bank finds it difficult to sell or otherwise liquidate the collateral or security held against the loan. Such collateral is spoken of as a “frozen asset.”

Almost every community has a savings bank that encourages working people to deposit small amounts of money and receive interest. This money is loaned in large amounts on mortgages to build houses, roads, schools, etc. Of course interest is an incentive for people to save. As a rule, the savings of a community or country tend to increase as the rate of interest increases. A rising rate of interest provides a larger supply of loanable capital.

Men save to provide for old age, sickness, unemployment, or some other definite purpose. They think of future wants. People may place their savings in a bank where they receive interest, or they may hide them away — hoard them — in a vault or safety-deposit box, or in some unsuspected place. In fact, the desire to save for future wants is so great as to impel many people to save regardless of the interest return.

It is not only desirable to increase one's earning capacity, but also to develop systematically and regularly the saving habit. A dollar saved is much more than two dollars earned. A dollar put at interest is a faithful friend, earning twenty-four hours a day, while a spent dollar is like a lost friend — gone forever. Histories of successful men show that fortune's ladder rests on a foundation of small savings; it rises higher and higher by the added power of interest. The secret of success lies in regularly setting aside a fixed portion of one's earnings, for instance 10 per cent; better still, 10 per cent for a definite object, such as a home or a competency. Of equal importance with systematic saving is the prompt reinvestment of interest earnings, especially during the years of productive income.

In every community one will find various agencies by which savings can be systematically encouraged and successfully promoted. These institutions promote habits of thrift and encourage people to become prudent in the use of money and time. They help people to buy or build homes for themselves or to accumulate a fund for use in an emergency or for maintenance in old age.

Savings banks have to perform an extremely important duty. They are trustees of people's hard-earned money. It is the prime duty of savings banks to protect this trust. What a man wants above all else when he puts his money in a savings bank is safety and protection for that money. It is seriously doubted whether

depositors of this kind are much interested in the amount of interest they get so long as they get a little, and can really feel free from worry that their money might be in danger.

The savings bank is not adapted to the needs of those with large sums to place at interest. It is a place where small sums may be deposited with a high degree of safety, earn a modest amount, and be used by the depositor at short notice. The savings bank lends money on bonds or mortgages and receives about 5 per cent. It pays its depositor from 3 per cent to  $4\frac{1}{2}$  per cent. The difference goes to pay expenses and to provide a surplus fund to protect depositors.

The question may be asked, "Why can not the ordinary depositor lend his money on mortgages and receive 5 per cent?" He can if he is a capable judge of financial values and is willing to assume the risks. When he receives 4 per cent interest at the savings bank, he is paying 1 per cent to  $1\frac{1}{4}$  per cent in return for reasonably assured safety and freedom from the necessity of selecting securities and keeping the money employed.

A mortgage is the pledging of property as a security for a debt. If Mr. Allen owns a dress store and needs some money to buy a stock of goods, he may go to Mr. Jones and borrow \$1000 from him. Mr. Jones will require him to give as surety a mortgage on his store or the stock of goods. This means that Mr. Allen agrees that if he is unable to repay the \$1000, the store or stock, or such part as is necessary to cover the debt, shall be turned over to Mr. Jones for disposition.

Under present law if a man wishes to foreclose a mortgage, — that is, compel its payment when due, — he can not appropriate the property for himself, but it must be sold at public auction. From the money received at the sale to the highest bidder the man who holds the mortgage, called the mortgagee, receives his full amount, and anything that is left belongs to the man who owned the property, known as the mortgagor.

Investing money, like everything else worth while, requires planning. It requires planning ahead to get the money to invest. Every one who desires to invest should have a systematic plan of saving for the accumulation of investment money. The savings account should be used as a continuous means of saving, with the

view of investing part of the fund from time to time as it reaches substantial proportions.

In considering the investment of savings, one should consider the savings bank as the outstanding investment trust that has stood the test of years, bringing together the savings of large numbers of people and investing them in only the highest grade securities.

It is well to have a clear understanding of just what "investment" means. "Investment" is not "speculation." People often confuse the two. Investment implies the return of all of the money, plus a reasonable income paid regularly. Speculation implies certain risks of the principal for the sake of a higher income or larger profit on the transaction. Speculation may be successful, but it is often unsuccessful and too often disastrous.

By far the most important thing to secure in investing money is the safety of the principal. United States Government bonds do not pay 6 per cent for just one reason — because many people are willing to lend the government money at a lower rate. The same principle applies to all concerns that offer securities to the public. If their securities are high grade, they can get money at a relatively low rate. If their securities involve a greater factor of risk, they will have to pay a higher rate of interest. In the matter of bonds or similar investments the difference in safety governs the difference in the return.

There are approximately 400,000 corporations in the United States, representing every variety of business enterprise. These corporations, whose stock and bond issues total many billions of dollars, are financed largely by funds supplied by the investing public. According to the Investment Banker's Association, more than 80 per cent of the new enterprises fail or suffer severe losses, while 10 per cent are pure fake schemes.

A bond represents a debt of the corporation and generally is secured by tangible property; stock is not secured by tangible property but represents part ownership in a business, the value and relative strength of the stock depending upon the successful management of the business.

**Commercial Banks.** We have already stated that the commercial banks, including the State and National banks, are the most

numerous type of banking institutions and that they exercise the greatest influence in the business world. Commercial banks exist to serve the financial needs of the business community by performing such functions as receiving daily deposits, cashing checks, discounting notes, bills of exchange, and trade acceptances. They may perform other services for their customers, but their chief function is in supplying credit through the discounting of what is known as commercial paper — notes, etc.

These institutions loan money for a short time, 90 days or less, to textile and other merchants or business men. They really supply a large part of the capital to carry on the business needs of textile and other industries. Thus commercial banks, the most important in our present economic organization, are engaged primarily in the double function of receiving deposits and issuing loans. They receive deposits for safekeeping, and then issue them to others in the form of loans, thus redistributing capital funds into channels most useful to the development of business enterprise. In this manner they bring together the surplus savings of individuals and form a large capital loan fund that can be used in financing industrial establishments, public improvements, etc.

**Investment bankers** are those who sell large amounts of corporation securities and naturally influence financial affairs. Seldom do they receive deposits or discount notes. They concern themselves largely with the financial structure and organization of the larger business or corporate enterprises. Management and control also become important factors in their financial arrangements. The sums of money involved are usually very large, often running far up in the millions. The financing may take the form of a capital investment or a long-term bond issue.

**Private bank** is a term applied to a commercial bank conducted by a single person or a partnership and not by a corporation. Private banks usually perform the same general functions that are undertaken by regular commercial banking houses. At one time these banks were very popular, but recently they have almost disappeared. Many of these private banks are located in large foreign population centers, catering to the complete financial needs of those particular people. All too often the proprietors of these banks have been unscrupulous and losses have been frequent.

As a result, most States, particularly where large foreign centers are located, have made it increasingly difficult for such banks to continue operation. Several investment bankers and also department stores operate very successful private banks.

**Trust Companies.** A trust company is an institution which devotes its principal attention to trust service for individuals and corporations. It offers, among others, the following services:

(a) Acts as executor of estates under wills. The advantages of having an institution with a trained staff act in this capacity are being more generally recognized.

(b) Acts as trustee under wills and voluntary agreements. Voluntary or living trusts are constantly being executed in great variety.

(c) Receives securities on deposit for safekeeping, collects the income and credits the amount for the account of the depositor, relieving him of the necessity of clipping coupons and filling out the forms required for collection.

(d) Acts as administrator, and as agent for executors, administrators, and trustees. While such persons can not delegate their responsibility of decision, they wish to use bank facilities for attending to the details of administration, and receive the benefit of information and advice on investments.

(e) Acts as guardian for minor children and conservator for incapacitated persons.

(f) Acts as transfer agent and registrar for the transfer and registration of stocks; and as registrar for bonds and notes of corporations and associations.

(g) Acts as fiscal agent for the payment of bonds, coupons, and dividends.

(h) Acts as trustee under mortgages.

(i) Acts as depository under reorganizations, escrow agreements, and contingent contracts.

**Exchange.** Another function of the commercial bank is the handling of various kinds of bills of exchange, etc. The process of making payment at a distant place without the risk and expense of sending money itself is carried on in various ways. Funds may be remitted from one place to another in the same country in seven different ways: postal money order, express money order, telegraphic money order, bank draft, check, sight draft, and registered mail.

A post office money order is a sight draft upon a particular branch office of the post office department. It is secured at a local post office in amounts ranging from one cent to \$100 after an application has been duly filed and the face value plus a small fee has been paid. Large amounts require the issuance of several \$100 orders. The order is then sent as regular mail and cashed by the receiver either through his bank or the post office.

An express money order is similar to a postal money order, but may be drawn for any number of dollars at the same rate as the post office order. This is issued at express offices.

A telegraphic money order is an order drawn by a telegraph agent at any office, instructing the agent at some other office to pay the person named in the message the sum specified. The rates are high, and in addition one must pay the actual cost of sending the telegram according to distance and number of words.

A bank draft is an order written by one bank directing another bank to pay a specified sum of money to a third party. This order looks much like a check.

A check is an order on a bank to pay the sum named and deduct the amount from the deposit of the person who signs the check.

A sight draft is an order on a debtor to pay to a bank the sum named by the creditor who signs the draft.

Money may be placed in a heavy envelop; sealed and sent as registered mail. In this case the post office guarantees the safe delivery of the contents.

Foreign exchange is a system for transmitting money to another country. By this means the people of different countries may pay their debts. The bills of exchange used for this process were described in the preceding chapter.

For an ordinary traveler doing business in a foreign country, the most common means of paying for purchases abroad are either letters of credit or traveler's checks.

A letter of credit is a circular letter issued by a banking house to a person who desires to travel abroad. The letter directs certain banks in foreign countries to furnish the traveler such sums as he may require up to the amount named in the letter. Suppose a traveler with a letter of credit for \$25,000 purchases \$5000 worth of merchandise at Munich. The Munich correspondent bank

would indicate this sum upon the face of the letter. If later additional purchases are made, the paying banks will note the amount involved directly on the letter. When the final payment has been made, the last bank returns the letter of credit to the issuing bank.

Frequently a traveler abroad will purchase at his local bank or traveling agency what are known as traveler's checks. These are generally standard amounts that correspond to the paper currency in this country. At the time of purchase, the buyer writes his signature upon the face of the check. When he comes to settle for a bill abroad, he signs the check in another space provided for that purpose and a comparison of signatures will serve as a means of identification. These checks often serve as currency where the local currency is not very stable.

**Postal Savings.** The Federal government, in order to encourage the spirit of thrift and to overcome the lack of confidence that foreigners and others may have in the general banks, has established a postal savings bank in post office buildings. The amount allowed to be deposited is limited, and the rate of interest is small. The principal is guaranteed by the government.

**Textile Credit.** Some banks specialize in credit extension to textile merchants, manufacturers of wearing apparel, etc. They build up a group of experts specially qualified to handle the financing of such loans and thus claim to offer better credit and banking facilities to the clothing industry. Thus, the banks of Boston extend better credit and banking arrangements to the leather, hide, and wool trades than do the banks in New York. Boston has thus naturally become the center of these industries, especially from the financial angle.

In times of depression, commercial bankers doing business with textile houses become greatly disturbed by the conditions when a large production of low-priced goods brings no one profits and actually causes many severe losses. This is quite as true of silks, woolens, and rayons as of cotton products. The first step in the solution of the difficulties within the industry lies in the direction of governing production.

**Factoring.** The large banks of the country have given only limited service to textile merchants, producers, and garment

manufacturers. This has been due to the fact that the large banks have not the technical staff to pass on the question of credit to the textile trades. Hence we find banks specializing in textile services developing in the great textile and garment centers of New York City, and also increased banking with commission houses, called *factoring*.

We saw in an earlier chapter the way in which a commission merchant acts as a selling agent, receiving a commission on the sales. Later, certain commission merchants obtained money for the mills from the banks by guaranteeing their notes. The term *factor* is applied to the commission merchant who assumes the duties of a banker as well as a selling agent. So that today we have many well-established firms as factors — that is, acting as selling agents and bankers for the manufacturer. This service includes furnishing space for display and storage purposes, billing, packing and shipping the goods as and when sold, attending to all of the details incident thereto, including credit investigations, assuming the credit risk on time sales, and paying over to the manufacturer the net value of the accounts created upon delivery of the goods to the purchaser. In effect, the manufacturer receives cash on delivery of goods without risk of credit losses, but through the use of the facilities of the factor the customer is granted the usual trade terms.

In recent years the tendency has been toward specialization, both in selling and in the extension of credit. Manufacturers have found that the results are far more satisfactory if their marketing is in the hands of their own selling organization, or selling agents, and the banking function delegated to the specialized organization of the factor, who has the advantage of experience gained through transacting a large volume of business for many mills. A competent factor must be more than a good banker. He must be a merchant as well as a banker, and be capable of guiding clients around the pitfalls of credits during periods of producing and distributing.

Persons in the trade unfamiliar with the way in which many competent textile manufacturers grow from small to large producers through being relieved of many credit and financial details that are not only expensive but also annoying, have little conception of

the magnitude of the business handled. Hundred-million-dollar organizations in factoring are no longer uncommon in New York City, and the credit ramifications of such large institutions are comparable only with the largest commercial banks or distinctly credit-reporting concerns. The extent of the service given in this part of the business is especially valuable in periods of declining trade and highly competitive merchandising.

The factoring system of assisting merchants is strong in all divisions of the textile trade. For many years some houses confined themselves almost exclusively to silk or dress goods. Today the same houses handle accounts in linens, cottons, rayons, wool, silks, and jute goods, and have been going more and more into selected accounts of garment production. Many traders and merchants who have made fortunes in textiles have been frank in ascribing a large part of their success to the sympathetic and cautious guidance of men in factoring institutions, who have found time in addition to their regular duties to go over their problems with them from many other angles than the primary one of gaining a commission for services rendered.

The factoring field undoubtedly calls for much more training in finance and merchandising than many bankers have found necessary in the conduct of their particular business. The credit service calls for more detailed attention than a host of bankers care to be burdened with in holding their clients. But quite aside from the mere cashing of sales or the passing on of credits, the opportunities in the field are called limitless by one of the leaders in the business, who is conceded generally to be much wiser than the average banker who is called on to deal with problems of merchandising.

**Methods of Payment.** In cases where the factor merely discounts receivables, the trade debtor repays him in an average time of 60 days. In cases where he advances against merchandise, his money may be loaned for a period of from two to four months, plus an average additional 60 days after the merchandise is sold and becomes an account receivable.

**The Call Money Market.** When brokers need funds, they go to the banks as a general rule, using securities as collateral. There are two types of loans made upon security collateral — time and call loans. Time loans are made for a specified period, — usually

three, six, nine, or twelve months, — and at a fixed rate of interest, while the call loan is renewed daily at a rate of interest that may fluctuate daily.

Call loans are callable on demand and may be negotiated at the “money desk” on the floor of the stock exchange, or through money brokers, or directly between borrowers and lenders. Because of the proved safety and liquidity of such loans, excess funds of banks all over the nation have been sent to New York to be loaned in the call money market.

Time loans are never negotiated on the floor of the New York Stock Exchange, but are made either directly between the borrowing broker and the lender, or through money brokers who charge the borrower a small sum for their services in obtaining funds.

Most of the security transactions on the exchange are settled on the following business day, which makes it necessary to provide to brokers loans which can be terminated at any time. Member firms instruct their representatives on the floor of the exchange to obtain such loans as they may need, and these are arranged for at the money desk. Interest rates depend on supply and demand. They are usually low, rating well under the current long-term rate, although at times of financial stringency the rates have been above 20 per cent.

During the last bull market many corporations loaned funds in the call market, having been attracted by the high interest rates. These loans were placed through the local banks, which charged a small commission for their services.

The New York Clearing House, however, has ruled that its members can no longer place call loans in the market for the account of corporations or individuals. The purpose is to keep Wall Street credit under closer control by banks. This step does not prevent corporations or individuals from placing their funds through private banks and non-clearing house institutions.

When the stock market panic of 1929 first developed, most corporations and many of the out-of-town banks took advantage of the call feature and demanded their funds at once. The large commercial banks came to the rescue of the brokers, however — the funds being supplied indirectly by the New York Federal Reserve Bank.

**Strength in Banking.** We must remember that most business, particularly in the textile and clothing industry, is done on a credit basis. In fact, 95 per cent of the business done in this country is done on credit.

Credit is *faith*, the foundation stone of successful business, and faith in business is maintained by the banking system of the country.

The banks dominate to a large degree the credit system of the community and the country. Therefore, it is essential for prosperity — the successful phases of business or economic life in production, marketing exchange, and consumption — that the banks be conducted by experienced and successful men who have sane and progressive business policies and are not influenced by psychological changes — fear, etc.

If fear enters our banking system, the annihilation of credit amounting to more than ten times the capital of the banks can take place in a very short time. This was illustrated in the depression of 1929–1932.

In times of depression there is in the banking system of the United States an elimination through suspension, consolidation, and voluntary liquidation of many weak uneconomic units. This has done more to strengthen the American banking structure than any of the reform plans so far proposed.

A reduction from 30,000 to 20,000 in the number of banks in the United States during the past eleven years, 1921–1932, has removed undesirable elements and causes of weakness that reacted against all banking. The result has been to strengthen the remaining banks with higher standards of character and soundness.

These inevitable readjustments have enforced reforms with greater thoroughness and effectiveness than could have been accomplished through other means, admitting at the same time that certain changes in existing laws have corrected some undesirable features in banking practice.

There are about 19,500 institutions at present operating in the United States and these should afford ample banking facilities for the nation. In 1921 there were far more banks than the nation needed.

In 1931 the banks on the average served the economic activities of only about 3500 persons each. The average capital per bank

was then about \$205,000 and the average deposits \$1,250,000. In 1933 the average capital per bank was about \$420,000 and the deposits nearly \$2,500,000. Total capital funds, which in 1921 were \$6,360,000,000, currently approximate \$8,500,000,000. The amount at the high point in 1930 was \$10,000,000,000.

**Value of Credit.** Credit has certain advantages and certain disadvantages, all of which should be known so as to secure maximum economic efficiency from the use of credit. The advantages may be summarized as follows :

(a) Economizes the use of precious metals, thus allowing greater use of them in the industries.

(b) It allows capital goods to be converted into purchasing power by means of a mortgage on property, which permits one to secure money from a bank, individual, etc.

(c) Cash basis business tends to limit the volume of business. Since credit involves only a limited use of money, the credit system increases the volume of business.

(d) Credit provides a means for successful business men to secure capital so as to engage in business and assist society.

(e) Small savings placed in many banks become centralized into large amounts which are loaned to large productive industries.

(f) Payments at a distance may be made conveniently and safely with credit instruments.

The disadvantages of the credit system are :

(a) In the hands of careless spendthrifts credit may lead to extravagance by means of installment buying. Extravagance leads to the purchase of luxuries and the loss of necessities in order to pay for the luxuries.

(b) Credit may lead also to over-speculation and expansion of business if the banks are willing to loan on easy terms. Money obtained easily from the banks leads to abnormal production of wearing apparel, etc., in the hope that the goods will rise in price. Many times it is difficult to dispose of the wearing apparel, hence the business man is unable to pay for the cost of expansion. Failures of business and banks will follow.

(c) If excessive credit is given, — that is, above the proper amount for the volume of business, — then credit takes the place of money, and is said to be inflated, tending to an unwarranted rise

in prices. Similar results will follow if the volume of credit is reduced proportionally below the volume of business. This is called deflation, and results in lower prices. Hence, banks must study the volume of business and decide on the proper amount of credit. Such a plan will give elasticity to credit so that it will vary with rise and fall of business.

### QUESTIONS

1. Why is barter impracticable for all transactions in the textile business?
2. Why is credit used so extensively in modern business transactions?
3. What is the function of money?
4. What are the characteristics of a good money?
5. How does the value of the standard coinage affect the price of commodities?
6. Why is a bimetallic monetary system unsuccessful today?
7. What do we mean when we say \$5 for a hat?
8. Why is a stabilized currency necessary to the merchant? to the worker?
9. Why is gold used as a basis for money?
10. What has caused many countries recently to go off the gold standard?
11. Define fiat money, Continental currency, greenbacks, token money.
12. If a man pays a debt of \$500 in pennies, must his creditor accept it?
13. If you owed the United States government \$137.95, name the kinds and amounts of money you might use to pay the obligation. What kinds of money could you not use?
14. Describe the various forms of credit used in business transactions.
15. What are the main functions of a bank?
16. Look up the history of the First and Second National Banks. What was the political struggle that resulted in the end of these banks? Would you advocate a strong central national bank today?
17. What provisions make a savings bank a reasonably safe institution for the small investor?
18. Distinguish between investments and speculation.
19. Describe the various types of banks and their functions.
20. Explain the functions of the Federal Reserve system.
21. Explain in detail the operation of the clearing house.
22. Why should a business man understand fully the meaning of each item in a bank statement?

**23.** Describe in detail the steps followed in borrowing money at a commercial bank to finance the purchase of a power sewing machine.

**24.** What is meant by the Reserve rates?

**25.** How does the rediscount function of the Federal Reserve banks operate?

**26.** Clearly distinguish the various methods that may be used to transmit funds to considerable distances.

**27.** How may a person intending to travel abroad arrange for the payment of his purchases?

**28.** What is meant by factoring?

**29.** What services may a factor render?

**30.** Distinguish between a time and a call loan.

## CHAPTER X

### RESEARCH AND INVESTIGATION

**Importance of Research.** The economics of clothing has already been defined as a study of the way in which man supplies his needs and desires for wearing apparel. Since these needs and desires are unlimited in scope, it follows naturally that economics should be constantly finding new materials, new processes, new uses, etc., in order to meet these potential wants. Research and investigation in the clothing industry are constantly adding to the sum total of clothing satisfaction. The progressive development of any industry depends upon the constant utilization of principles that will improve qualities, discover new uses, etc., so as to satisfy our wants.

Many large corporations and the United States government, through the Bureau of Standards, have large staffs of investigators and scientists who are applying principles of biology, chemistry, physics, psychology, art, sociology, and economics to textiles and wearing apparel in order to anticipate and to satisfy our wants.

Biology is the science of living things, and since the raw materials for textiles — cotton, linen, wool, and silk — come from vegetables and animals, the principles of biology may be utilized to improve and explain the growth of these different fibers.

Chemistry explains the compositions that are used and changes that take place in bleaching, manufacture of dyestuffs, rayons, etc.

Physics explains the physical properties of fabrics, such as mercerization, moisture-taking, luster, color, the principles of mechanism, and the use of the machinery in the manufacture of the yarn, cloth, etc.

The application of art will bring out new designs, weaves, and lines, as well as new colors of fabrics.

Study of sociology will bring to our minds the characteristics of human nature and show us how to satisfy its wants.

Economics, as the science of business, will show us the best means of producing and marketing wearing apparel and the most effective means of extending and increasing credit, so that we can give to all the satisfaction of meeting their wants in the highest degree possible.

It is obviously impossible to describe all the developments that have been worked out through research in the textile and wearing-apparel industries, but we can mention some outstanding fields in which progress has been made.

The study of the growth of cotton and the application of fertilizers, rotation of crops, use of insecticides, and the best staples for various uses, give additional opportunities for research in biology.

The application of principles of physics gives an opportunity to use various mechanical laws in carding, spinning, and weaving, so as to increase production, improve the quality of the finished product, and thus bring down the price and place more textiles and other products within the reach of all.

The development of rayon shows us how it was possible to make synthetic fabrics to sell more cheaply. The discovery of mercerization and other finishing operations gave us an opportunity to add new properties to dull fabrics, producing mercerized cotton; and schreinerization gives an additional luster to mercerized cotton fabrics. The process of bleaching by bleaching powder gave us a quick and inexpensive method of finishing cotton fabrics, thus increasing their aesthetic appearance.

The discovery of coal-tar dyes gave us dyestuffs of various degrees of fastness and color, placing rich artistic coloring within the reach of all at low prices.

Opportunities still exist for additional research into methods of manufacture of ramie, a fiber with some physical qualities stronger than other fibers. The study of improving the growth of the silkworm offers opportunities in research along biological lines.

The economics of wearing apparel demands also that each worker should be trained technically for his task, so that his skill may be developed in the shortest time, to reduce the waste caused by inexperience and faulty workmanship. As far as possible, each person should be engaged in the type of work adapted to his abilities and that offers him the greatest opportunities. Since there are

various types of workers, it follows that the training may be short or long — a week or two, or a year or more, depending upon the extent of training necessary for the position. The training of workers for the wearing-apparel industry, as for all other industries, should be scientifically done, in order not to have an excess or a scarcity of workers.

**Coal-Tar Dyes.** One of the most important projects of research affecting the textile industry has been conducted by the dyestuff manufacturers in their development of synthetic dyestuffs from coal-tar. The application of principles of chemistry to coal-tar products has given us over 10,000 dyestuffs. Some of these have taken the place of vegetable dyes. To illustrate: *Madder* is a plant the roots of which, when ground into powder and dissolved in water, yield a valuable red dyestuff of the same name, which was used extensively up to fifty years ago. The use of madder appears to have been known from the earliest times, as cloth dyed with it has been found on Egyptian mummies. It was used for dyeing the cloaks of Libyan women in the days of Herodotus (450 B.C.), and Dioscorides speaks of its cultivation in Caria in 440 B.C.

The ordinary dyer's madder grows wild over eastern Europe and western Asia. The madder root yields colors of the greatest permanence, and was employed in dyeing linen and cotton. Two kinds were fixed upon cotton: one is called madder-red, and the other, which possesses a much higher degree of luster and permanence, is called Turkey red, because for a long time the madder root was obtained from Turkey. In the dye trade, this madder also bears the name of *alizari*, the coloring element being known as *alizarine*.

Up to the year 1812, madder was extensively cultivated in Holland, France, Turkey, and to a small extent in the United States. Its cultivation, however, has almost ceased since *alizarine*, the red coloring element of madder, has been made artificially.

In 1868 two German chemists discovered a method of making artificial *alizarine* from anthracene, one of the products of coal tar — a discovery which had the effect of revolutionizing the dyeing of calico and other cotton-printing industries. The production of artificial *alizarine* forms one of the most brilliant pages in the history of modern chemical achievement. The German chemists

studying the quinone group of compounds — a group discovered shortly before — were led from theoretical grounds to ascribe to the alizarine of the madder root the character of a quinone. They then proceeded to ascertain the hydrocarbon from which it was derived; and on finding this to be anthracene they attempted to build up the alizarine from this as a basis. They were highly successful. The first patents were taken out in 1868, but the new madder substitute did not come into general use until about 1872. Anthracene, which formerly was considered a useless by-product in the manufacture of gas, was sold at about \$2 per ton under the name of "green grease," for use as a lubricant for wagons. Immediately it rose in price, and by 1873 commanded \$500 a ton. The artificial alizarine has entirely superseded the natural product from the madder plant; and the cultivation of madder, which was once a great and flourishing industry, has been abandoned.

**Artificial Indigo.** Research in the study of coloring compounds showed that the indigo of commerce contains varying quantities of pure blue coloring matter, ranging from 75 to 80 per cent — or in other words, contains from 20 to 25 per cent of impurities. These impurities do not contribute to the coloring power; they are inert, and naturally in dyeing yarns do not always yield the same tone (due to the varying quantities of impurities). This large percentage of foreign substances in the natural product greatly hinders the usefulness of the dye, often marring the pure color of fabrics unless great care and pains are taken in its application. Because of these impurities in natural indigo, chemists directed their efforts to finding a satisfactory substitute. This they finally discovered in experimenting with coal-tar products, and artificial indigo derived from this source is rapidly taking the place of the natural indigo derived from plants. Scientific tests have shown conclusively that artificial indigo is identical in chemical composition with the indigo of commerce.

**Cotton Research.** As a result of the study of soil chemistry, and of insect pests that tend to destroy the cotton plant, it has been possible greatly to increase the yield of cotton. The Cotton-Textile Institute was organized in July, 1926, by the cotton mills of this country, to provide a single agency for the comprehensive study and analysis of cotton and its development and marketing.

Since its organization in April, 1927, the New Uses Section of the Institute has conducted more than 130 separate studies of new or extended uses of cotton. It has surveyed the opportunities for developing export trade; it has undertaken technical research through a research associate assigned to the Bureau of Standards in Washington; it has facilitated the development of simplification, standardization, and specification. One of its principal activities recently has been the direction of a comprehensive promotional campaign in behalf of styled cottons, by means of which the Institute was able to stimulate very greatly the demand for fine cotton goods for apparel purposes in 1932.

Through its cost-engineering department, the Institute has made a thorough analysis of cost accounting in several groups of mills and has published an outline of this study, stressing the sound basis for predetermining fabric costs.

In certain of its groups the Institute has been instrumental in formulating codes of sound trade practices. Through a series of conferences it has undertaken a study of distribution methods, and proposes to develop still further information in this most important field. From the outset, the Institute has encouraged coöperation with other associations in the industry, and the nature of its market studies has brought it into close relation with the representatives of a number of associations representing other industries, as well as those governmental agencies interested in promoting the prosperity of the cotton-textile industry.

In all of its work the Institute has sought to be a continuing stimulant to more critical and constructive thought within the industry. It is, and probably will continue increasingly to be, an educational influence, and improvement of merchandising has been definitely stimulated by the study and analysis the Institute has given to these matters.

The Institute has made many suggestions to cotton growers, such as: Southern growers should not only reduce their acreage, but should improve the vacated land with fertilizers, and the planting of other forms of farm products to bring a halt to the declining fertility of the soil. If such steps are taken, the South can increase the cotton productivity of each acre to such an extent

that this country will be able to produce the staple at prices with which the rest of the world can not compete.

Experts in southern agriculture state that if the southern cotton grower practiced rotation of crops, fertilized adequately, and cultivated efficiently, he could produce on the average twice as much cotton per acre as at present. The land over a large part of the cotton belt has been robbed of its fertility during the past twenty or thirty years through failure to practice crop rotation and to apply the right kinds and right quantity of fertilizer. Cotton growing is a seasonal occupation, which requires intensive work at certain periods of the year, but does not take up the grower's time during the rest of the year. On an average the cotton grower does not work on his crop more than perhaps 40 or 45 per cent of the year. It would be generally agreed that a manufacturer whose plant produced only half as much as it was capable of producing, whose machinery was allowed to deteriorate over a quarter of a century, and whose organization worked 40 or 45 per cent of the year could not hope to meet competition and stay in business.

Alabama's cotton improvement campaign added \$2,000,000 to the value of the crop in 1931. This increase is based on the fact that 37 per cent of the 1930 crop was untenderable (staple length shorter than seven-eighths of an inch) and that in 1931 this figure was reduced to 7.9 per cent. In amount, this meant 545,750 bales of untenderable cotton in 1930 and only 112,000 in 1931. The difference in amount, multiplied by the increased value created by improving the length and quality of the staple, revealed that the gain exceeded \$2,000,000. The improvement campaign is designed to eradicate inferior grades of cotton in the State.

Coöperating with farmers, ginners held special gin days for the improved varieties of cotton, saving more than 1,000,000 bushels of seed, or enough to plant one-third of the 1932 crop.

The chart of activities of the New Uses Section of the Cotton Textile Institute presents five important phases of its work.

1. *Research Work.* This work is centered about the activities of a research associate maintained by the Institute at the Bureau of Standards, where studies are undertaken to develop and prepare fabrics for specific uses through fundamental investigations on yarn, on effects of different twists, weaves, and finishes.

2. *Industrial Promotion.* In coöperation with individuals, mills, trade associations, bureaus and agencies of city, county, state, and national governments. The services of the Institute are made available for increasing the use of cotton fabrics in industrial channels; to design new weaves to meet new demands and conditions in industry; to assist in the preparation or revision of purchasing specifications.

3. *Style Promotion.* Style promotional activities of the Institute are carried on through the following media: Trade consumer advertising, style bulletins, swatch books, trade and casts, motion pictures, coöperative promotion and pattern companies, educational work with important consumer groups.

4. *New Uses Committee.* The Institute enjoys the active coöperation of the Department of Agriculture and the Department of Commerce in the development of present and new uses of cotton, and assists other government departments, bureaus, etc., in providing for special textile requirements.

5. *Publicity.* The advantages of cotton fabrics are presented to the public through addresses, radio broadcasts, motion pictures, exhibits, special articles, statements to the newspapers, trade and technical publications, consumer magazines, etc.

In 1929 members of the New Uses staff traveled 50,000 miles, addressing more than 1,000,000 persons at special meetings by radio, etc.

Campaigning for styled cottons in 1929 took positive form in fifteen advertisements in consumer fashion magazines, 180 advertisements in cotton and dry goods trade publications, sixty talks and exhibits at meetings of home economics teachers in schools and universities and other consumer groups, sixteen talks to important trade groups, such as retail stores' sales staffs.

Almost 200,000 copies of the Institute's style bulletin, *Flashes of Fashion*, have been distributed in fourteen issues. The present circulation per issue is now in excess of 21,000 among retail buyers, stylists, fashion editors, and important consumer group leaders.

Not only continued interest but much more active interest in styled cottons on the part of retail merchants is already discernible in the current season in advertisements.

**Research on Knitted Fabrics.** Considerable study of the problems of weighting and stretching of circular knit rayon underwear

cloths in now being done. Marked difference of opinion concerning the problem is noted among the knitters, some feeling that no more weighting is used than the slight percentage necessary in finishing. These knitters dismiss the anti-weighting campaign initiated by leading retailers as propaganda. Others are strongly insistent that goods should be labeled as to the amount of weighting used for each width of cloth.

Still others blame some of the larger knitters for the development of a weighting problem, declaring that the policy of some firms has been a steady grading down in an effort to undersell the rest of the market. Some knitters also complain that they have no assurance that their customers will not forget to label cloth as weighted, even when the knitter is most careful to label his product properly. They hold that the weighting problem is one for the underwear cutter to solve rather than one which should be considered by the cloth manufacturer. The final solution of this argument will probably depend on further study of the problem.

**Mechanical Preparation of Flax.** For the first time in the history of mankind, the slow and difficult processes of preparing flax fiber by hand have been completely transformed by mechanical means in the State of Oregon. Today in the United States fiber of highest quality is being prepared mechanically for linen manufacture in a fraction of the time and at one-fourth of the cost required heretofore. This means a revolution in the age-old flax fiber industry of the world, and the dawning of a new day for the struggling linen industry of America. And to Oregon, most recent of flax-producing districts, belongs the glory of this achievement.

This is the only place in America where linen products are being manufactured entirely from home-grown flax. It is the only place in America where the long "line fiber" that goes into linen manufacture is now produced. It is the only place in the world where hand labor has been almost completely replaced by mechanical power in the harvesting and processing of flax without injuring the quality of the fiber.

Now that Oregon has learned how to produce high-grade line fiber by mechanical means, it is an industry that can spread through the North Pacific coast, the Great Lakes States, and the North Atlantic coast wherever the climate is moderately cool and humid.

In all of these regions fiber flax has been grown successfully, but never developed for textiles because of the laborious and costly hand labor involved.

Some of the flax produced in Oregon seems to be fully equal to the medium grades of the flax retted in Belgium (where the world's best fiber is prepared). Probably the greater proportion of it will average as good as or better than the average of the flax fiber imported from Russia and the Baltic states, where the greater portion of the world's fiber is produced.

To realize what this means, it is necessary to understand something of the difficult processes of fiber preparation. To produce the long line fiber required for linen manufacture the crop can not be cut, but has to be pulled up by the roots. Then the straw must be retted, which means soaking in water or spreading to the action of dew and rain to dissolve the gums that bind the fibers together. After the retted flax is dried the next process is breaking, whereby the woody core of the flax stem is broken or crushed into small pieces but without injury to the fiber. Then comes the final process of scutching, which means a smart beating of the straw to shake out the pieces of core, or shives, thus leaving the fibers free.

While linen was originally one of the staple fabrics of America and was used for nearly 200 years by the colonists for homespun linen and linsey-woolsey, every process was performed by hand; when the cotton gin made mill-manufactured cottons plentiful and cheap, homespun linens were completely and cheerfully replaced. For the past 100 years fiber flax has been practically unknown in America, and our linen industry has been an insignificant thing.

With this new machine a crew of six men produces more fiber than 85 men using hand breakers and scutchers were able to produce seven years ago. The cost of scutching has been reduced from six cents to one cent a pound. A higher proportion of line fiber is recovered, of a better grade and a finer reed, and the percentage of less valuable spinning tow has been reduced from 20 to 5 per cent.

That is the transformation in the preparation of flax fiber. In pulling, threshing, retting, and scutching, the total cost has been

reduced to less than one-fourth of the former cost by hand. With this system a quality of fiber is produced that is equal to any in the world. More than half of the output is used in local spinning mills in Oregon, and the remainder is shipped to eastern mills and abroad. In 1932 shipments were made to Massachusetts, New Jersey, New York, Antwerp, and Barcelona. Even Ireland has been supplied from this plant, 350,000 pounds of spinning tow going to Belfast from Salem in 1927.

This experiment in manufacturing linen by machinery was done by the State of Oregon with the assistance of convict labor. The convicts working in the flax industry are paid a small wage for their labor, running up to 75 cents a day. To provide work for the inmates, twice as many of them are employed in this industry as would be required under normal conditions.

The methods now perfected in Oregon have reduced costs to less than one-fourth of the cost of hand labor, whether that labor be convict or free. And finally, a profit of 19 to 32 per cent on the sales during the past two years — 23 to 48 per cent on the costs — might be considerably reduced without ruining a private enterprise.

In the entire United States at present there are only twelve or fourteen flax-spinning mills, producing linen yarns, twines, threads, fish lines and nets, and some coarse toweling. Most of them are located in the eastern States and use imported fiber. Not one of them is equipped with machinery for spinning yarns fine enough for handkerchiefs or the better grades of dress linens. They have neither the machinery nor the expert spinners and weavers that have made the fine linen goods of Ireland, Belgium, and France famous throughout the world.

**Novel Fabrics.** The Russians manufacture a fabric from the fiber of a filamentous stone from the Siberian mines, which is said to be of so durable a nature that it is practically indestructible. The material is soft to the touch and pliable in the extreme, and when soiled has only to be placed in a fire to be made absolutely clean.

Iron cloth is largely used today by tailors everywhere, for the purpose of making the collars of coats set properly. This cloth is manufactured from steel wool and has the appearance of having been woven from horse-hair.

Wool not the product of sheep is being utilized abroad for the making of men's clothing. This is known as "limestone wool," and is made in an electric furnace. Powdered limestone, mixed with certain chemicals, is thrown into the furnace, and after passing through a furious air blast, it is tossed out as fluffy white wool. When it comes from the furnace, the wool is dyed and woven into lengths like cloth. A pair of trousers or a coat made of this material can not, it is claimed, be burned or damaged by grease, and the cloth is as flexible as that made of sheep's wool.

An English manufacturer has succeeded in making a fabric from old ropes. He obtained a quantity of old cordage, unraveled it, and wove it by a secret process into a kind of rough cloth. The resultant material he dyed a dark brown. A suit made from this queer stuff was worn by the manufacturer himself, and it is said that he has a large trade in this product in the British colonies.

A novelty in dress material for women is spun-grass cloth, which may, it is said, be had in white, green, lilac, pink, and yellow shades. The inventor of this was an Austrian, and his invention is said to have resulted in the production of a material as bright and as flexible as silk.

Paper clothes were worn by the Japanese troops, who found them very serviceable and much warmer than those of cloth. Paper dressing gowns, bath robes, and similar articles of attire are now being turned out by the carload in European countries. The paper of which they are made is of the "blotting" variety, and after being treated by a new process is dyed in various colors or printed with a pretty floral design.

Even gloves are made of paper, the principal claim to advantage being that they are susceptible of being cleaned many times.

**Synthetic Fibers.**<sup>1</sup> Since 1884 the fact has been known to the scientific world that a substance of the same chemical composition as silk could be made by artificial means ; but the problem of rendering the process industrially practical required many years of research. The product was first called artificial silk and is said to be the result of forty years of careful experimenting by Count Hilaire de Chardonnet of France — the inventor of the original process. When Chardonnet first began his labors, he studied the

<sup>1</sup> E. Schwarz, in *Journal of Commerce*.

silkworm and its process of spinning, with the determination to reproduce it, so that the fabric might be created as nearly as possible from the original elements. He found that the leaf of the mulberry was a form of vegetable fiber that attracted the silkworm by its tenderness and flavor, and that by the natural process of its secretions, the worm mixed this fiber with a substance that completed the formation of a gummy mass from which it spun its cocoon. Naturally the chief difficulty was to discover a chemical combination that corresponded to the bodily secretion of the caterpillar, and this Chardonnet did after numerous trials and failures. This done, the experimental machinery was devised and built. The wood originally used for the manufacture of artificial silk was mulberry. This was crushed by machinery and chemically treated and the "stock" or pulp was poured into cylinders. Heavy pressure was brought to bear upon it, by means of which it was forced out through minute holes in the form of tiny fibers of any desired length.

These fibers were almost perfect reproductions of the thread of the silkworm. There was one serious disadvantage, however — the product was extremely inflammable. Later this fault was to a large degree overcome by immersing the artificial threads in a solution of ammonia. About 1890 it was discovered that it was not necessary to use the wood of the mulberry tree, and that almost any variety of soft wood might serve. In 1893, large works for the manufacture of wood silk were established at Besançon, France, under patents granted to Chardonnet.

The history of inventions and patents shows that as soon as one individual or corporation has secured a monopoly on a certain machine or process, immediately competitors start research to invent a similar machine or process involving different elements, so that the special products of the monopoly are soon made by competitors. This is shown in the invention of different types of textile machinery, as well as in the creation of different types of synthetic fibers.

**Rayon.** There is hardly an industry which has had a development as tremendous and rapid as the rayon industry, especially in recent years. The quality of the product has been improved greatly, manufacturing methods perfected to a high degree, and

production costs reduced. This, together with the fact that the difficulties in dyeing and printing this new textile have been overcome to a large degree, has brought about a wide use of rayon in almost all branches of the textile industry. For rayon is not only used alone but also in combination with other textile fibers, — cotton and wool, — and also with the natural filament, silk. It is said that rayon, when used together with other fibers, either enhances the value of the resulting product or reduces the manufacturing cost of the fabric.

Four countries have contributed to the evolution of “artificial silk,” as this raw material was formerly called. It is now called rayon or synthetic fiber or fabric. The native land of rayon is France. Three other countries contributed to this remarkable development: Fremery and Urban, of Germany, worked out the cuprammonium process, and Bevan of England has developed the viscose process, which is now the process used most extensively. America and Germany share the honor of the invention of the acetate process. An American took out the first basic patent for this process, while a German, at about the same time, made the first practical batches of acetyl-cellulose.

It may be well to explain here briefly the four different processes according to which rayon is now made.

*Nitrocellulose.* The first process applied commercially to the manufacture of rayon was worked out by Chardonnet of France, who took out the first patent in 1884, although for several years before chemical yarns were being made by squeezing a mixture of wood and cotton pulp through fine holes. The nitrocellulose process, as used by Chardonnet, generally takes as a base cotton linters. By means of nitric acid the cellulose is transformed into nitrocellulose (known as gunpowder) dissolved in a mixture of alcohol and ether, and the solution forms the spinning filament.

*Cuprammonium.* This process employs an ammoniacal copper oxide solution (Schweitzer’s reagent) to dissolve the cellulose — either wood pulp or cotton linters. Six per cent of the world’s production of rayon in 1927 was made by this process.

*Viscose.* For this process wood pulp is mostly employed. The cellulose is transformed into alkali solution by means of caustic soda, then with carbon bisulphide into cellulose xanthate. This is brought into solution with weak caustic soda. The viscose process is the one now most widely

used. In 1927, 84 per cent of the world's rayon production and 82 per cent of the production in the United States was made by this process.

*Cellulose Acetate.* While the final product of the three previous processes is regenerated cellulose, the product of this process is an ester (salt) of cellulose: The cellulose — cotton linters are used mostly — is mixed with acetic acid, acetic anhydride, and a catalytic. The resulting cellulose acetate is then dissolved in acetone (a solvent), wherefrom the filament is spun. Seven per cent of the world production and 3.8 per cent of the United States production of rayon in 1927 was acetate cellulose.

The ratio of the 1928 world production was: viscose, 84 per cent; nitrocellulose, 8.5 per cent; acetate, 5 per cent; cuprammonium, 2.5 per cent.

After the Chardonnet patent, many other patents were obtained for the manufacture of artificial silk, or rayon. At present there are several distinct forms of rayon on the market, such as (a) viscose rayon, (b) acetate rayon, (c) nitrocellulose rayon, (d) copper ammonium rayon, and (e) spun rayon. Some of these forms have been developed very highly and have been given special trade names — celanese, bemberg, etc. The methods of manufacturing are so guarded by patents that the corporations producing the fabrics have practically a monopoly on them.

**Increase of Rayon Production.** The tremendous growth of the rayon industry is shown most vividly by a comparison of the following figures:

Production, 1896 . . . . .	1,200,000 pounds
Production, 1928 . . . . .	over 350,000,000 pounds
Production, 1933 . . . . .	207,600,000 pounds

This drop in production was due to the depression.

Until 1921 the rayon industry in the United States gained production slowly, — about 1,000,000 pounds a year, — but after 1921 the output rose from 15,000,000 to 52,000,000 pounds in 1925. During the three-year period of 1926 to 1928 the output increased by 46,000,000 pounds, and for 1929 the production was estimated to be between 25,000,000 and 30,000,000 pounds higher than in the preceding year.

*Leading American Manufacturers of Rayon.* The Viscose Co. is the largest manufacturer of viscose in the United States and throughout the

world. The product is sold in twenty different sizes and types of yarn — bright, subdued luster, multifilament yarn — and is used for practically all purposes. The yarn is sold as Crown Brand rayon with the following special names: Dulesco, Dulenza, Durafil. The acetate yarn is sold as Seraceta.

The second largest rayon-producing concern in the United States is the du Pont Rayon Co., controlled by E. I. du Pont de Nemours & Co. Inc. The new product of this firm, Chardonize, a subdued luster yarn, has met with great success with the knitters of women's underwear, and almost as much with the men's wear trade. Novel fabrics have been made by combining the standard Tubize yarn and Chardonize. Although both yarns are nitrocellulose rayons, a cross-dyed effect is obtained which was hitherto only possible in combining a rayon yarn with acetate yarn. The new brand is also very successfully used for ladies hosiery and men's hose, on account of its low luster.

There was until recently only one producer of acetate yarn, the Celanese Corporation. The company shows great activity in developing dyeings and prints, especially "discharge" prints of unusual effects. A number of other manufacturers have announced their intention of taking up the production of this yarn, which becomes more and more important.

The American Bemberg Corporation, a subsidiary of the I. P. Bemberg A. G. in Barmen, with a total capital of \$8,000,000 (company's financial report, December 20, 1928), is at present the only important domestic producer of cuprammonium yarn. The company produces a great variety of yarns — 300, 240, 180, 150, 120, 100, 80, 60 denier — featuring both natural and subdued luster. The latest development is represented by the yarns: Superfine A quality untwisted on spools, ultramultifilament, natural subdued luster:

15 denier.....	25 filament
25 denier.....	25 filament
30 denier.....	25 filament
40 denier.....	30 filament
52 denier.....	30 filament

As an illustration of the fineness of such yarns it may be interesting to note that the diameter of a single filament measures 0.0004 of an inch, in comparison with the finest filament known, a spider filament, which is 0.00023 of an inch. The weight of a filament of natural silk (produced by the larva of the silk worm, *bombyx mori*) averages 1–3 denier. A newspaper sheet is about nine times as thick as one filament of a 15 denier yarn. Some of the trade names under which Bemberg fabrics are being sold, according to the leaflet of the Bemberg Corporation, are: Svelda;

Scharg moire (Bemberg and silk); Svelda chiffon crêpe, ninon, pique, radium, tripole and voile; and Zeppelin chiffon; also Burson fashioned hose; Berkshire full-fashioned hose, and Gold Seal, Phoenix, Better Wear, Hole-proof, Schmidt, Deflame, Lady Burd, Strutwear; for underwear, circular-knit Augusta, tricot-knit Silkanese (Bemberg and silk).

**Spun Rayon.** Rayon is not a "fiber" like cotton or wool, but a "filament," thousands of yards in length, like silk. Rayon yarns, therefore, were, and still are, generally made by twisting a number of filaments, in the same way as thrown silk. Efforts, however, had been made, originally in Germany on account of the shortage of textile fibers, to utilize the waste in rayon manufacture for spinning into yarn. Today spun rayon yarns are being used satisfactorily for many types of fabrics, either straight rayon fabrics or rayon in combination with wool or other fibers, giving unusual color effects. In the United States the Fitchburg Yarn Co. was the pioneer for spun rayon, working with the cotton spinning system. The product is sold under the name of Sase. Today this concern is the largest producer of spun rayon in the United States. It uses Vistra, imported from Germany and manufactured by the I. G. Farbenindustrie.

Today spun rayon yarns are produced in five ways, namely:

1. Bradford system of worsted spinning.
2. French system of worsted spinning.
3. Spun silk (or schappe) system of spinning.
4. Woolen system.
5. Cotton system.

At present spun rayon is no longer made from waste, but from cut rayon, which is absolutely uniform. The variety of uses for spun rayon is great, notably for dress and lining materials, damasks, jacquard fabrics, plushes, velvets, towels, carpets, etc.

New textile products are continually being put on the market containing rayon waste and spun rayon yarns, both on the worsted and the cotton and silk spinning systems. Crêpe dress cloths from spun rayon yarns are popular, and the new tweed coatings and suitings provide a use for rayon waste and staple fiber.

There has been a great deal of experimentation in the use of all kinds of spun rayon yarns, which leads one to believe that if one-tenth of them are successful, a steady demand will be created for waste for woolen and worsted spinning and also for staple fiber

to be spun on the cotton system. Attractive dress goods within reach of all purses are now on the market. Various household textiles are also offered, all containing spun rayon yarns.

The field is greater than it was even a year ago and is expanding all the time. The fact that the depression has not entirely killed the spun rayon yarn industry indicates that the foundation at least is basically sound. The care with which the big rayon companies grade and handle their waste, in spite of the low price at which it is selling, lends confidence to the feeling that eventually this valuable textile fiber will prove its real value and sell at a price that will justify its continued maintenance of quality.

**Research in Silk Production.**<sup>1</sup> It is not possible to produce silk with profit in this country in competition with the foreign article. The great difficulty hitherto, and probably a continuing one, is our inability to compete with the cheaper labor of countries where silk is an important commercial product. Even in some of these countries a subsidy has proved to be necessary. The production of silk entails a good deal of hand labor in the feeding and handling of the larvae and the conversion of the cocoons into the raw silk of commerce. Reeling silk on a commercial scale involves, also, expensive apparatus and technically trained workers.

The chief hazards of the industry are certain devastating diseases of the silkworm which can be guarded against only by scrupulous attention to sanitary measures covering the entire life period of the insect from egg to adult.

Beginning with Colonial days, various efforts to develop a silk industry in the United States have been made, all of which resulted in failure in the end. As already indicated, the only important obstacle has been the labor factor. The white mulberry, or some of its varieties, the leaf of which is the desirable food for silkworms, can be grown successfully almost anywhere in the United States, and there has been wide demonstration of the successful rearing of silkworms. Since it is impossible to grow silk profitably in the United States, the silk manufacturers are interested in the development of silk in other countries in order that they may secure the highest grade of the filament.

<sup>1</sup> United States Testing Co., Inc.

**Sericulture.** The application of biological principles to raising silk has done much to improve the quality. The total production of silkworms varies greatly. The Agriculture and Forestry Department announces that on April 30, 1932, Japan's hatching of spring crop silk eggs was estimated at 73,441,200 grams. Compared with actual hatching for the 1931 spring harvest of 79,534,991 grams, the estimated figure represents a decline of 7.7 per cent. White silk eggs accounted for 54 per cent of the above hatching, and the balance was of the yellow variety.

As the silkworms thus hatched will undergo a thorough weeding-out process, the production of cocoons will not always tally with the quantity of silk eggs brushed, but this estimate is noteworthy in view of a previous estimate made public by the Japan Raw Silk Association showing a reduction of 12.3 per cent. It is the view of the Agriculture authorities that the 7.7 per cent reduction was due to the silk farmer's conservative production policy of 1932.

At the Agriculture Department it is remarked that the weather was in general unseasonal in the spring of 1932. This, coupled with the scantily manured condition of the fields during the past two years, is expected to reduce materially the supply of feed leaves, and a 10 to 20 per cent decline in cocoon production is expected in many prefectures. In extreme cases even a 30 per cent reduction is believed possible.

Aided by the government, the farmers in many districts have begun, on their own initiative, to replace old mulberry trees with saplings. The acreage of mulberry trees in full bearing stage has thereby been reduced more than 30,000 chobu (1 chobu equals 2.45 acres). The total mulberry acreage of Japan proper on June 30, 1930, was 716,000 chobu. One official stated that he is prepared to see a reduction in the mulberry supply to 85 per cent of that in the spring of 1931.

It is, therefore, very probable that the weeding-out process for silkworms in 1932 was most drastic, and even a wholesale abandonment of worms may have been resorted to by the farmers. Moreover, cocoons spun by silkworms that were fed on mulberry leaves of undermanured fields are usually of a poor quality, which can not fail to affect adversely the production volume of raw silk.

Silkworms will, when mulberry is not available, eat substitutes such as lettuce, but from the digestion and assimilation of these substitutes, they can not produce the fluids, fibroin and sericin, of which the cocoon filament is composed, and therefore can not secrete the silk filament. The sericin is the gum which is dissolved and removed in the boil-off operation; the fibroin is the portion which remains and is the useful portion of the raw silk thread.

The digestive, assimilative, and secretive functions of the silkworm are so delicate and sensitive that differences in the chemical contents of the soil, types of mulberry used, the climate where it is grown, the season of the year, etc., directly affect the physical characteristics and chemical reactions of the fiber secreted. There are also many species and varieties of the silkworm, and extensive cross-breeding has taken place in Japan to breed-up the worms to larger and more vigorous cocoons yielding a larger quantity of useful fiber.

Mulberry can be grown and cocoons can be produced in nearly all portions of Japan, from a latitude corresponding to Boston or Montreal to well south of New Orleans, and altitudes ranging from sea level to some of the high mountain plateaus.

Mulberry grown under such diversity of climate and soil will vary extensively in its nature. In any given locality the mulberry leaves grown in the warm, moist days of spring will differ decidedly from those grown in the long hot days of summer or the shorter, less favorable days of autumn. From 26 to 30 days are required from the hatching of the eggs for the cocoons to mature. Therefore, in nearly all parts of Japan three crops of cocoons can be produced each year. Approximately 50 per cent are grown in the spring, 20 per cent in the summer, and 30 per cent in the autumn. The quality of the spring crop is superior to the summer and autumn crops and the prices correspondingly higher.

When the mature worm is ready to spin, it begins secreting a rather rough, uneven, and poor quality filament, which it uses to form a web to suspend the cocoon from the surrounding twigs, straw, split bamboo, or other rough material upon which the worms are placed for cocoon spinning. This first fiber is called "blaze," and it is stripped from the cocoon and discarded before reeling.

As the secretion of the filament proceeds, it becomes more regular, gradually increasing in size from about 2.5 deniers to approximately

4 deniers and then very gradually decreases until the worm is completely exhausted and ceases spinning. The last portion of thread is, like the first portion, irregular, very fine, and poor in quality. It is discarded as waste, and in good filature practice is not reeled beyond where it is about 1.75 denier in size.

There are from 1400 to 2000 feet of useful fiber on the average Japanese cocoon. From these cocoon filaments, which begin with a small diameter, increase quite rapidly to a maximum, run uniformly for a while, and then slowly taper off, the Japanese raw silk reeling girl is expected to reel an even raw silk thread. A  $\frac{13}{5}$  denier raw silk should theoretically average 14 denier and by the raw silk rules of the Silk Association of America should show by actual test an average between 13.5 denier and 14.5 denier. It requires from four to six cocoon filaments, depending upon the state of the cocoons, to produce a  $\frac{13}{5}$  denier thread, and the reeling girl must keep them adjusted in proper proportion of fresh cocoons, partially exhausted, and nearly exhausted cocoons. An exhausted cocoon is dropped out when its size is about  $1\frac{1}{2}$  deniers and a fresh cocoon added at about 3 deniers.

There is, therefore, an unavoidable change in the raw silk thread with the addition of fresh cocoons of about 1 to 2 deniers in the normal process of reeling.

With this in mind, the raw silk classification committee of the Silk Association of America has taken the position that a raw silk thread within 2 deniers of the average size is normal. It also happens that in viewing raw silk panels on the seriplane boards, a sudden change of 2 deniers is just about noticeable as a very faint stripe. But if the reeling girl is able to change the cocoons regularly, if no cocoon filaments break before near exhaustion, and if the speed of reeling is not too great, she can make the ideal thread, which is rated on the seriplane panel as 100 per cent.

It is, of course, not possible to maintain this ideal condition continuously. As the changing of cocoon filaments to keep the thread running becomes less regular, and the adjustment of the partially exhausted cocoons less accurate, more and more stripes of 4, 6, and 8 deniers occur, and the grade of the raw silk becomes lower.

Just as the textile industry of the United States varies from a small plant of a few machines buying thrown silk a few cones at a time, up to a great mill buying 200 and 300 bales of raw silk at once, the filature industry in Japan consists of small production by the neighborhood

farmers up to the great filature organizations operating many large mills and buying their cocoons in every portion of Japan.

Many of these small filatures, carefully supervised, and operated with the women of the immediate neighborhood, reel very good raw silk, but in the purchase of their cocoon supply, the sale of their product, and the volume of their capital they have about the same relation to the great filature organizations as the small corner grocer in this country has to the great Atlantic and Pacific Tea Company.

Years ago, when the American silk industry was small and the manufacturing units were small, the Japanese began to replace the hand-reeling of the farmers' families by the power-driven or so-called steam filature.

The filature purchased its supply of cocoons in its own neighborhood, and labeled its product with its own trade mark or "chop," and the American consumer was satisfied to purchase the little shipment of a few packages of homogeneous, fairly uniform, and identifiable raw silk under the maker's chop and fixed responsibility. As the American manufacturing units increased, and the volume of specific numbers of construction requiring uniformity in raw material expanded, the manufacturer began to demand his raw silk in larger units or runs. From five-bale lots his orders increased to 10, 20, 30, 50, 100 bales, etc., until at present it is not uncommon for some knit goods organizations to purchase 200 or 300 bales of one quality at one time.

The average production of the Japanese filatures is about  $1\frac{1}{2}$  bales of raw silk per basin per year, with many small filatures probably producing not more than one bale per basin per year. The medium and small-sized filatures do not have sufficient capital to enable them to hold the silk from the market until they have enough to make even a 10-bale lot. Three hundred bales would exceed the entire year's production of many filatures. It therefore becomes necessary to sell small lots at frequent intervals.

In Yokohama, these lots were formerly carefully inspected, sorted, graded, and assembled into marketable 10-bale runs. The exporters maintained large inspection laboratories with skilled inspectors, who knew the filature, the types of cocoons it purchased, and its general reputation for workmanship. In addition, the inspectors made a careful visual inspection for uniformity of color, manner of packing, and other characteristics that influence quality. This visual inspection was followed by sizing, winding, and other tests to determine quality. The grade of the small lot was established and it was assembled with other small lots into runs under a single chop, to supply the demands of the American consumer for 20, 40, 60, or 100 bales of the same grade and chop.

Let us consider a big filature of 1000 basins. It will produce approximately 1500 bales in 10 months of operation, or an average of 150 bales per month. The exporter in Japan and the importer in America assumed responsibility for this assembly, and in accordance with the demands of the American consumer, stood responsible for its grading of the delivery. This assembling of bales and lots had its origin in an American demand.

As the industry expanded, the system of assembling bales and lots naturally opened the door to non-uniform lots and unsatisfactory practices. When the filatures began transporting cocoons from one district to another, the inspector no longer could be assured of their origin, and the names of districts upon chop tickets became meaningless.

The Shinshu raw silk, the product of the great Shinshu district in Nagano prefecture, where the cocoons were grown on the side hills and around the lake shores by the farmers, was reeled by small filatures into what was considered "soft natured" raw silk. Today there are between 50,000 and 60,000 basins in the great filatures which line the shores of lake Suwa alone. Their cocoon supply must come from many different districts, and besides the large cocoon warehouses at each plant there is a coöperative warehouse company operating thirty-six large warehouses for the storage of cocoons.

From the description given earlier of the effect of climate, season, soil, type of silkworm, etc., upon the cocoon filament, you probably begin to suspect a possible cause for the so-called "two-tone effect" in knit goods. Stripes have become the dominant grading defect in silk hosiery. They have two general causes: (1) either a marked change in size of the tram<sup>1</sup> or (2) difference in the dye-absorptive capacity of the raw filament.

There seems to be a general impression that the two-tone effect is of recent origin, and that it is rapidly increasing. It may be increasing, but it has probably existed for a number of years, although more recently recognized as difference in shade, instead of stripe, caused by difference in size.

For many years the Japanese filatures have reeled for average size. The reeling girls are taught the proper number of cocoons to use to make the average size required, and in the re-reeling room sizing skeins of either 225 or 450 meters are taken at random from each reeling girl's skein. If it is found that she has reeled too coarse or too fine a skein, she is penalized. Naturally the girls endeavor

<sup>1</sup> See author's trade edition of *Textiles* for explanations of terms.

to average up the thread. If by any chance two or more cocoon ends go down at once before she can throw in fresh ones, the silk runs a fine end for some distance, 10 meters, 20 meters, or 100 meters. She then throws in three or four cocoon ends, either together or in quick succession, and a coarse end of perhaps 6, 8, or 10 deniers results.

When the hosiery industry was using five, six, eight threads and more, the variations were not very noticeable. They generally "evened-up," but if they did not, the buying public were not so critical. The flesh-pink color of the human leg, with its perfection or imperfections, did not show through the fabric, and the wearer did not care very much. A six-thread tram was equivalent to 84 deniers, and a sudden change of six deniers, about two cocoon filaments, was about seven per cent. But with a three-thread fabric, it amounts to about 15 per cent. With the color of the skin showing through, the 15 per cent sudden change makes a definite stripe. It is probable that, as the Japanese raw silk producers contend, the general evenness of Japanese raw silk has improved in the last 25 years, and today there is a larger proportion of even silk on the market than in earlier days. Our standards have changed and our requirements have become very much more exacting.

As our tram decreased to a five-thread, four-thread, three-thread, and we now strive for a two-thread, the 450-meter sizing test no longer reflects the evenness of raw silk as it works out in manufacture. The sizings were reduced to 225 meters, then to  $112\frac{1}{2}$  meters, and now some technicians are advocating nine-meter tests to determine the short, fine, and coarse ends. The seriplane is a device developed and now in use to estimate the unevenness within the length of a sizing skein. It is probable that its introduction may have somewhat modified the reeling girls' procedure.

Testers formerly drew 10 skeins to represent the bale, and sampled two bales to represent a five-bale lot. The official sample today consists of 40 skeins drawn at random, four from each bale of a 10-bale lot. The next report of the raw silk classification committee of the Silk Association will probably recommend 50 skeins from 10 bales, or five skeins from each bale.

In the Japanese filatures every skein can be inspected. In Yokohama and Kobe every book can be inspected. In America, the

inspection and the testing must, by the very nature of the market conditions, depend upon a representative sample of reasonable size. Therefore, the fundamental assumption of the entire system is sufficient uniformity within the market unit of the merchandise, so that a representative sample can be drawn and a safe judgment formed from the inspection and test results upon this sample.

In recent years there has been an increasing number of indications that 10-bale lots of raw silk are arriving in this market so lacking in uniformity of color, nature, size, evenness, and other quality characteristics as to make it impossible to take the official sample, drawn at random from each bale of a lot, to inspect it and test and obtain results which may be depended upon to represent the lot.

The criteria of dependability are of two kinds: (1) the laboratory's indicator of reliability is the accuracy with which the lot can be resampled and retested and obtain duplicate results with a reasonable limit of tolerance; (2) the mill's indicator of reliability is the extent to which the quality of the finished product and the cost of the manufacturer's operations confirm the results of the inspection and test. If the lot is not uniform, the laboratory results upon the sample may reflect the lack of uniformity and damage is prevented; but if it does not, the mill results usually appear too late to be of value in preventing damage.

In so far as the manufacturer bases his judgment of the raw silk he prepares to use in his mill upon a sample that is less in quantity or distribution than the 40-skein standard sample, drawn at random from each and every bale, he increases the hazard of depending upon a non-representative sample. One book to represent a 10-bale lot, that is, 10 skeins drawn from two bales of a five- or 10-bale lot, illustrates sampling which is too limited in distribution and number to give a representative sample of any except a very uniform 10-bale lot of raw silk.

The first and most important thing to do is to take steps to impress upon the primary market that a bale or group of bales constituting a lot shall be uniform in nature, color, size, type, district, and season of cocoons, even if it is necessary to group bales in less than 10-bale lots.

The new conditions introduced in the Yokohama and Kobe markets, January 6, 1932, are both favorable and unfavorable to

securing desirable results. Since that date all raw silk intended for export must be bought and sold on the certificate of grade issued by either the Yokohama or Kobe Imperial Conditioning House, and the certification of grade by either is final. No silk is allowed to be shipped unless it has been inspected, tested, certificated, and sealed by the testing house, and it must leave the port with the seal unbroken.

The export companies formerly maintained large, well-equipped inspection departments, responsible for the proper grading and packing of the cargo. They had a chance to examine every book, and even skeins if it seemed necessary, and to assemble the books into export bales. Since January, 1932, they do not have that privilege, but must content themselves with the 50-skein sample furnished them by the testing house. They are complaining bitterly of this curtailment in their opportunity to inspect and grade material for which they must be responsible to their customers in the secondary markets, like New York.

The quality of finished silk goods is dependent upon a number of factors in the various stages of manufacture and finishing, but by far the most important element is the determination of the quality of the raw silk used.

In the case of silk knitting, the knitter usually secures his tram-filling silk yarn either by purchasing raw silk, throwing it in his own plant or having it thrown on commission, or by purchasing tram from a throwster, either with or without a specification of the grade of raw silk used to produce the tram.

Finished goods are graded by the absence of defects. It is a negative type of classification dependent upon the number of defects present.

One of the great abuses in silk finishing is the weighting of silk by the addition of chemicals such as tin chloride, sugar of lead, etc. The purpose is to increase the weight of silk fabrics, thus suggesting a better quality.

**Weighting of Silk.** Experiments show that beyond a certain point each ounce of tin weighting added to the thread silk — and especially if aging has been permitted — increases the possibilities of damage in handling and therefore in the cleaning process.

Since 1926 the percentage of tin weighting applied to worm silk has had two effects — namely, the decrease in the tensile strength

and wearing qualities of the fabric, especially after exposure to sunlight, moisture, and under normal conditions of wear; and second, the steady and proportionate reduction in the price of the garment to the consumer. It is through excessive tin weighting that the American woman has been enabled to buy "silk" dresses at \$4.98.

In general, special weakening of the fiber begins when the tin weighting passes 25 per cent — that is, one pound of tin to three pounds of silk. For economic reasons manufacturers and finishers of the fabric, as well as merchandisers of the garments, can hardly be expected under present conditions to hold the weighting to that figure. They are therefore prepared to accept a maximum of 50 per cent weighting on fabrics able to carry it — that is, one pound of tin to one pound of boiled-off silk.

But in times of sharp competition this proportion has been greatly exceeded by certain manufacturers and demanded by certain distributors. This has resulted in inordinate and excessive claims for damages falling on the dry cleaners. The total volume of business done by the dry-cleaning industry in the United States and Canada is slightly in excess of \$700,000,000 per annum. The total amount of claims paid per year is approximately \$10,000,000. The cause for half of these claims may be traced with reasonable accuracy to the excessive and improper weighting of silk. It is an unfair burden placed upon an industry whose charges have steadily decreased and whose service to the American public has steadily improved.

The silk industry has accepted the trade practice rules adopted at its conference held recently in New York. Rule 1 contains the following definition of weighted, pure dye, and mixed goods.

*Weighted Goods.* Goods containing in the finished state (a) silk or silk and other fiber or fibers, and (b) more than 10 per cent of any substance other than silk or such fiber or fibers except black — which shall not exceed 15 per cent — shall not be designated by a term containing reference to silk or such other fiber or fibers unless there be added to such designation the word *weighted* or some other qualification which shall reasonably indicate that such goods contain an addition of metallic salts or other substance above mentioned.

*Pure Dye Goods.* Goods containing silk, or silk and other fiber or fibers, shall not be designated pure dye if they contain in the finished state more than 10 per cent of any substance other than silk or such other fiber or fibers except black, which shall not exceed 15 per cent.

*Mixed Goods.* Goods containing silk and other fiber or fibers shall not be designated by a term containing reference to silk unless there be added to such designation some qualification which shall reasonably indicate that such goods contain fiber other than silk.

**Substitute Materials.** Research has supplied society with many artificial substitutes for fabrics and raw materials. The laboratory has made available as everyday possessions many beautiful pieces of rayon clothing and artificial leather and pearls. Millions of men and women of average means, position, and intellect live better, know more, and are richer in worth-while possessions than the dukes and duchesses of 300 years ago.

**Need of Rubber Research.** A wealth of raw materials at low prices has spurred manufacturing industries to continue their untiring quest for new products. But this abundance of raw supplies, available in some instances at prices representing only a fraction of their former worth, has unfortunately caused some industries to fail in expanding utilization of their products.

For example, the rubber manufacturers have ceased to make progress in developing new uses for a commodity for which there is admittedly no substitute. With crude rubber in plentiful supply at three cents a pound, it seems as if advances should have been made in its utilization outside the field of tire manufacture — for such purposes as road surfacing, building insulation, airplane manufacture, and as a plastic material for the manufacture of hundreds of articles of commerce.

**Development of Color Charts.** In order to reduce the number of shades of a color used in wearing apparel each season, a committee of manufacturers has been formed to decide on certain shades for the season. The color correlation chart when adopted is issued to members of the Textile Color Card Association.

In this chart, which will serve as a color guide in coördinating apparel and accessories, the fashionable shades for town, sports, and evening costumes are listed according to their cost, and for

each group are given the correct colors for shoes, bags, hosiery, and gloves.

The fashion highlights in color harmonies and contrasts, including bi-color and tri-color effects, are indicated in another division of the chart, which is to be used in conjunction with the spring season cards for silks, woolens, shoes, and hosiery.

The chart will not only serve as a merchandising reference for retailers to indicate the outstanding shades for accessories, but it will also provide a guide for manufacturers in keying their production to the basic costume colors for the coming seasons.

To show how waste has been reduced to a minimum by this development, let us consider that a generation ago there were twenty shades of navy blue used in wearing apparel. Today that number has been reduced to two or three.

**Research in Wholesale Marketing.** Plans for the establishment of a national institute for the study of wholesalers' problems are being considered. The project, which would be financed through associate memberships held by wholesalers' trade groups in the grocery, dry goods, electrical wares, and other fields, has support from a majority of wholesale associations, but has not progressed beyond the planning stage because of the depression.

As outlined, the institute would aim to establish a better consumer understanding of the wholesalers' functions, conduct research on cost and other problems common to all jobbers, and present the wholesalers' side at all hearings on legislation affecting their interests.

**Merchandising Research.** A movement for the establishment of an institute of merchandising research is soon to be realized. The institute will take the form of a central clearing house or laboratory to collate data obtained from actual merchandising experiments conducted by various member stores throughout the country.

Practically every important industry today is maintaining research laboratories, which play a vital rôle in developing new and more scientific methods. Merchandising is one of the major elements of the entire business picture and yet comparatively little has been done of a scientific nature in the study of its problems and in practice based on adequate and tested experimental data.

Merchandising today continues to be conducted largely on "hunches," gist of opinions, etc. The reason for this is the fact that nobody engaged actively in retailing has time to conduct scientific merchandising experimentation, to note the results in a proper way, and eliminate all extraneous factors which do not pertain to the particular question being analyzed.

The proposed institute will deal, for example, with such fundamental subjects as the prices at which merchandise sells best to consumers; what constitutes a proper assortment for any given community; and a subject of particular importance — how can the size of the average sales check be increased?

It is planned to have the institute make experiments in various departments of stores ranging from small to large size, and to compile data on these and hundreds of other subjects. Reports will be issued to members of the association each year in bound form like a set of law books containing "cases" on merchandising subjects.

The chief value of the data to be issued by the institute is that it will be empirical and based on actual experiments, properly and scientifically made, whereas the information now available on merchandising subjects represents little more than opinions by prominent retail executives.

Opinions are valuable. But the science of merchandising can never make progress on opinions alone. After this institute has been functioning for a number of years, a large accumulation of data and experimental proceedings will have developed, which will be a reservoir of merchandising information that the merchant can profitably turn to for answers to perplexing problems.

**Labor Control.** Various experiments have been conducted in the manufacturing process of various fibers to see if it is possible to reduce the cost of operation. For the purpose of labor control, in order to insure low operating costs, some form of piecework and bonus payment is recommended. If this method of payment is used, it must be kept under constant supervision of the most thorough sort. It must be accompanied by time studies of every operation whenever changes in equipment or operating conditions are encountered. An application of carefully controlled research and development as to new products, new equipment, and improvement of old products and old equipment must be continuous and energetic.

**General Textile Research.** For the first time in its history, there has been made available to the textile industry of this country a foundation fund for scientific and economic research amounting to approximately \$1,900,000. The Textile Foundation thus far has appropriated only the income of its fund for textile research, on about a 50-50 basis for scientific and economic or merchandising research.

The United States Institute for Textile Research, Inc., was in process of organization by leading bodies of the industry while the bill for authorization of the Textile Foundation was pending in Congress, and following the passage of the bill, President Hoover appointed two preliminary directors of the United States Institute as directors of the Foundation — Franklin W. Hobbs, now its chairman, and Stewart W. Cramer, its present treasurer. There is no connection whatever between the Textile Foundation and the United States Institute for Textile Research except that both are organized for the promotion of scientific and economic research for the benefit of the textile industry. The Textile Foundation is a fund administered by a board of five directors, consisting of the Secretaries of Commerce and Agriculture and three others appointed by the President. The United States Institute for Textile Research, Inc., is a coöperative, non-profit, membership corporation operating under New York laws, which has as one of its objectives the raising of a foundation fund for textile research, to be administered by a self-perpetuating board of trustees.

These two organizations provide the foundation upon which an adequate program for textile research may be built. The funds made available by the Textile Alliance are sufficient to initiate the work, and the United States Institute has provided a medium for safely meeting future needs. The 135 research-minded textile men who made up the United States Institute membership at the close of its first year are but a fraction of those needed to insure the permanent success of its work, but the fact that 90 per cent of them have renewed their membership indicates that the services rendered are valued and that the organization is headed in the right direction. The nature of the services already provided and those planned, together with the objectives and policies either tentatively or definitely determined, may be outlined as follows :

The United States Institute for Textile Research, Inc., provides a definite means for putting into action the thoughts and hopes of textile men who for many years had been convinced of the industry's need of scientific research and of some coöperative body representative of the whole industry that might engage in research and its promotion.

The industry had seen other old industries adventure in scientific research and profit thereby; it had seen new industries developed directly by research; it had witnessed a few such developments within, or closely allied to, the textile industry; it had seen a few textile concerns, most of them large in size and surplus funds, engage in scientific research to their personal profit.

With such large available supplies of facilities and skilled personnel in commercial, educational, and government laboratories, their utilization in coöperative research, fundamental or otherwise, would seem to be the quickest and cheapest path toward the desired goal. The ultimate ideal is a central group of laboratories directed and financed coöperatively by the industry.<sup>1</sup>

The founders of the United States Institute were well aware that the raising of a permanent foundation fund for fundamental research was likely to be a man-sized and long-time job. However, instead of delaying active research until ample funds and ideal facilities were available, plans were developed that made possible the immediate starting of a scientific textile research program.

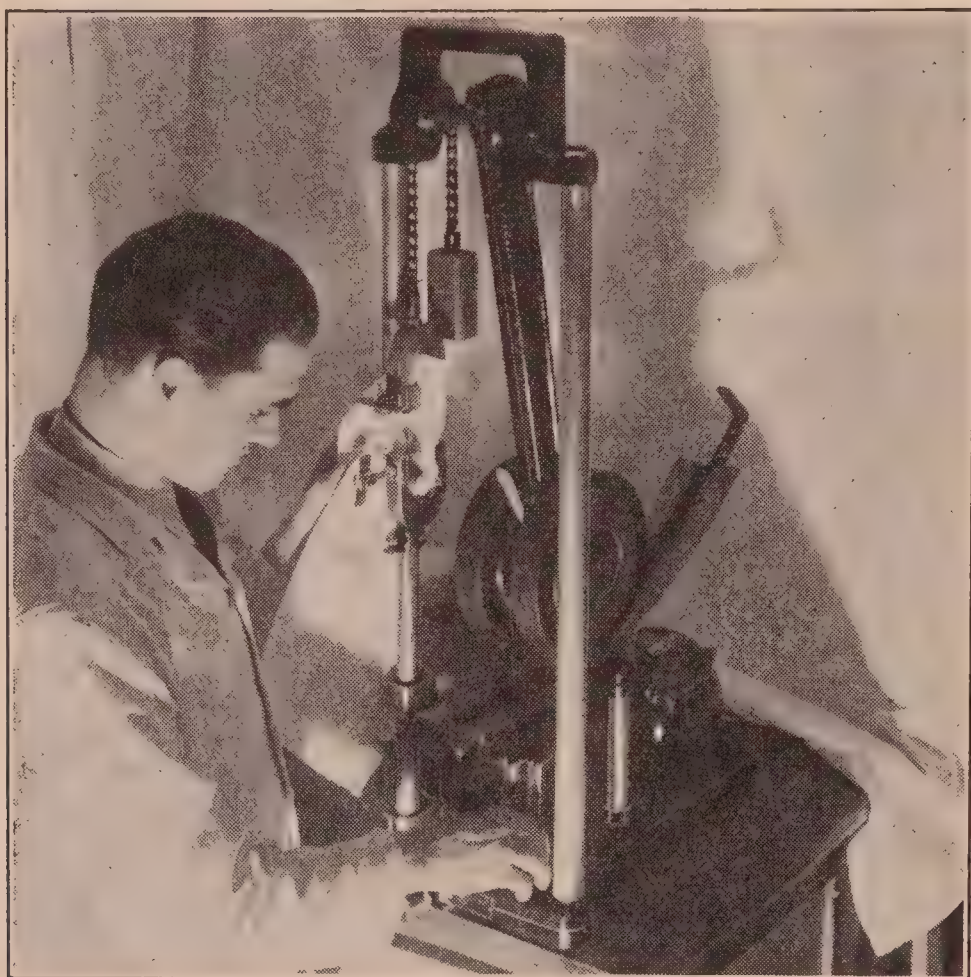
Briefly, these plans involve the utilization of existing research facilities; the building up of a research service library efficiently abstracted and indexed; the publication of abstracts and a bibliography of current textile researches; and the coördination of textile research in progress.

**Testing Laboratories.** In order to sell textiles and other wearing apparel commodities on merit, it is necessary to know the use of each piece of fabric and each garment and the conditions under which it is to be used as well as the qualities desired. This can be discovered only by establishing certain specifications for each article and then testing it according to the specifications made.

To take the "guess" out of buying and to establish merchandise standards one of the large retail dry goods stores — R. H. Macy

<sup>1</sup> From *Survey of Textile Research in the United States*, 1931.

& Co., Inc. — in 1932 established a testing laboratory. Since its inception, the laboratory has fully justified itself as a highly valuable addition to modern retailing. Several thousand tests have been made, and the results have been decidedly worth while from the



TESTING THE STRENGTH OF COTTON FIBERS

In a store laboratory

standpoint of the store, the manufacturers from whom it buys, and greater consumer satisfaction.

For some years, the Macy organization followed with keen interest the work of the Federal Bureau of Standards. This body specifies standards for the purchases needed to satisfy the tremendous wants of the government. It buys by specification and conducts complete testing laboratories, with the result that huge savings are effected and better merchandise secured.

The outcome was the establishment by Macy's of a testing laboratory in a small way as an experiment. The immediate results were extremely gratifying. The store decided to enter into the task in a whole-hearted manner, and equipment was expanded and

personnel increased, and a complete laboratory organized as the store's Bureau of Standards and Testing Laboratory.

This laboratory does four important things. It analyzes and compares competing offerings of manufacturers to obtain facts as to the content of the merchandise so as to determine the best value. The "guess" is taken out of buying and facts substituted. For example, if two manufacturers offer two blankets, each at the same price, the laboratory very quickly determines which is the better purchase.

The laboratory also conducts tests for the purpose of ascertaining the performance of merchandise and its durability. These tests are of highly varied nature, including fading, washability, weakness and composition of material, weighting, dyes used, etc. When a fabric or merchandise stands up under the tests given, the results as far as consumer satisfaction are concerned are bound to be good.

A few of the things the laboratory deals with are: the matter of slipping warp threads in various materials, especially silk crêpes. Numerous cases appear where the filling threads weaken, a condition noticeable in woolen broadcloths for women's coats and also in velveteens. Some velvets give rapidly. Weighting in silks is often too heavy. Under the heading of dyes come questions of fading, washing, dry cleaning, bleeding, crocking, irritation and rashes, and perspiration. The laboratory holds, for instance, that the material sold for a certain purpose should be fast to light, in so far as that use is concerned. A bathing suit, for example, should have a maximum resistance to light.

The laboratory also tests materials returned by customers for adjustment. If, for example, a raincoat is returned by a customer as not shedding water, it tests it and finds out why, getting the details of the use to which it has been subjected. Very often the laboratory is able to make definite suggestions to manufacturers as to how they can improve their products. It should be added that the laboratory does not in any case work against any manufacturer but instead offers its full coöperation for the benefit of all concerned.

Another highly important use of the laboratory is in the checking of any statement to be used in an advertisement regarding merchandise. Unless the laboratory gives a substantiating report the statement is not printed.

Outstanding among the direct effects of the establishment of the laboratory is the influence it has had on the store's buying staff. It has stimulated buyers to more careful buying, based on facts rather than guesswork. The buyers know that they have the fact-finding resources of the laboratory to guide them, and they make full use of its facilities. In fact, the laboratory has bred a more scientific merchandising attitude throughout the whole personnel of the store.

The director of the Macy laboratory, discussing buying by tests and specifications, said: "I believe the time is not far distant when the individual purchaser is going to buy by specification. Those manufacturers who have not already done so will organize and support testing laboratories, possibly under the direct supervision of their trade associations. Standards will be evolved and products will be properly and accurately labeled. Retailers will buy according to specification and manufacturers will be insured against unfair competition. The consumer will benefit immensely, because he or she will obtain standard merchandise at a fair price."

### QUESTIONS

1. How do the principles of biology, chemistry, physics, psychology, sociology, art, and economics apply to the study of textiles?
2. How is Turkey red made?
3. Why can we buy colored calico at such a low price today?
4. How is artificial indigo made?
5. What is the work of the Cotton Textile Institute?
6. Suggest methods by which the southern cotton-growers can improve their crops.
7. Describe the flax industry.
8. How did Count Hilaire de Chardonnet invent the processes for making synthetic fibers?
9. What four countries have contributed to the rayon industry?
10. Describe the four processes by which rayon is made.
11. What improvements has America made in the silk industry?
12. What causes stripes to occur in silk hose? How can they be prevented?
13. Of what value has the United States Institute for Textile Research, Inc., been to the industry? To the public?
14. What has the Macy testing bureau accomplished?

## CHAPTER XI

### PATENTS, TRADE-MARKS, AND DESIGNS

**Importance.** With the invention of new machines, new products, and new designs in wearing apparel to meet the new wants of consumers, we find a parallel development in patents, trade-marks, and other protective devices.

A *patent* is a government grant to an inventor securing for him the exclusive privilege for a number of years of making, using, or selling any new and useful machine, manufacturing process, or composition of matter — such as a special form of rayon manufacture or celanese. The United States government, in order to promote the progress of science and the useful arts, confers this privilege for seventeen years, without opportunity for renewal.

**History.** The patent privilege of monopoly was first given in England about 1623. It had its foundation in the early days of history, when the Crown assumed that it owned everything and every one within its realm, and that it was the prerogative of the Crown to give to any individual the exclusive right to do or to make or to sell anything it chose. Naturally, as the people began to acquire more rights, there was much objection to the granting of such monopolies, especially when the Crown used these rights to abuse the public. By 1623 the Parliament of Great Britain passed what is known as the statute of monopolies, establishing strict limitations to the power of the throne with regard to monopoly grants. In effect, the statute stated that the Crown did not have and from that time on should not have the right to grant a monopoly for anything except inventions and manufactures. However, this statute went somewhat farther than our own Constitution, by permitting the granting of monopolies not merely for new inventions but also for the introduction, importation, and establishment of new industries from abroad. These might be well known and

established in foreign countries, but if new in England might be granted monopoly privileges.

The American colonies were also eligible to receive patent grants under this statute, and such rights were issued to many American residents. At the meeting of the Constitutional convention after the Declaration of Independence, provision was made for the protection of patents, which were well defined by that time.

The Patent Office, as it exists today, was established in 1836. A superintendent (the title has now been changed to commissioner) was put in charge and a staff of examiners was provided. At that time every inventor applying for a patent was required to file a model of his invention in the Patent Office. The Patent Office building, which has now been abandoned for a new building, was therefore designed largely as a museum. Before long the number of models became so great that it was impossible to display them. Drawings and reproductions of drawings were found to be much more feasible, and for the past fifty years or more the Patent Office has relied on these almost entirely. No models have been required since some time in the 'eighties or 'nineties of the last century, and a few years ago most of the old models were destroyed by order of an Act of Congress. This adoption of drawings for disclosing facts about the inventions for which patents are sought has been the greatest single change in the patent system. .

**The Patent System.** The purpose of the patent system is to procure for the public definite information regarding new or improved devices and operations. A patent is a monopoly. It is substantially the only monopoly that our form of government, or any other form of government, believes is desirable. It is not a monopoly in the sense that the owner of the patent takes away from the public something the public already has.

On the other hand, when a man makes an invention, he produces something that is entirely new, and which the public might never have had but for his activity in inventing it. In order to prevail upon him to disclose his invention to the public, rather than to keep it secret (and the invention may be kept secret), the government agrees to give to him for a limited period a monopoly on the thing that he has produced, as being new. The understanding is that he must, in order to get that monopoly, make such disclosures

as will make it possible at the end of the period for any member of the public, any one versed in the art, as we say, to employ his invention.

The method by which this process is conducted is carefully provided for by the Patent Statutes. To that procedure have been added the rules of practice of the Patent Office, and, of course, in the 140 years that the patent system has been in existence, a good many court decisions have fixed much of the detail of procedure.

Possibly one of the best ways to see how the Patent Law functions is to look at the inventor who makes something worth while and to see what procedure he goes through, what happens to him and how he accomplishes for the public the purpose which the patent system has behind it.

First, he must file an application in the Patent Office. The Constitution says that the right may be given to the inventor. This means that you can not, although you may have something absolutely new, get a patent for it unless you are the inventor. You can not overhear something, you can not learn incidentally, you can not learn honestly of some new device, and apply for a patent on it. The application must be filed by the inventor himself. But the inventor may assign that application to whomsoever he wishes; then the patent is issued to the man to whom he assigns the patent, and this man may then own the invention.

The application at the present time, developed through the growth of the law, consists of three papers. The first is the formal petition addressed to the Commissioner of Patents, in which the inventor identifies himself, says he has made an invention and would like a patent on it. The second is what is technically referred to as the specification and claims, accompanied by drawings. This is a careful description of the invention, indicating primarily what the invention is, what the purpose of the invention is, and giving in more or less elaborate detail, a review of the particular things which are necessary to carry out the invention. This description is the thing that the public wants for future use. It wants to know what the applicant has invented, so that after the monopoly expires the public can use it. It is likewise essential for the public to know, while the monopoly is alive, what features it can not use, so that this description, or specification as we call it,

is accompanied by a set of claims, one or several hundred. Fortunately there is generally a small number. Each of these claims sets out briefly the particular phase of the new invention on which the inventor wishes a monopoly. The specification itself is a description which goes to the public after the monopoly expires.

The claims are the things that determine the monopoly, or the things that the inventor keeps from the public. If the inventor has in his specifications described ten things, and in his claims only nine, that tenth thing presumably he dedicates to the public, and the public is free, even during the monopoly, to use that part of his invention. The statement of specifications and claims is signed by the inventor.

Then follows the oath, in which the person applying for the patent swears that he is the inventor, that the invention has not been in public use, and enumerates a number of other conditions which the statutes provide must exist before the invention can be patented. In other words, if a man makes an invention and uses it for upwards of two years publicly, the presumption is that he does not want a patent on it, and is willing to give it to the public. So that when a person files his application, he must swear that he has not used the invention publicly for the 2-year period. Under the act of 1836, patents were granted for 14 years, and provision was made by statute to extend the patent for a 7-year period, if desired. Many of them were so extended on the payment of proper fees and showing — which meant that a patent grant was ordinarily for 21 years. It finally was determined that the public ought to know what to expect with regard to patents. Too often when a patent had almost expired and the public thought it was to obtain possession of the secret, the inventor would renew his patent for another 7-year period. It was decided to have a single period, without chance for extension. That single period was made a little longer than 14 and a little less than 21 years — that is, for 17 years.

The application having been filed in the Patent Office, the next question is, "Is the patent going to issue?" It is the function of the Patent Office to issue the patent, but it must first determine whether the patent should properly be issued. In other words, there is an examination of the application. At present this consists of two steps: First, to see that it is in proper form; second, to

see, as far as may be, that there is an invention involved. That is, to make sure there is some consideration to be given to the public eventually in return for the monopoly that is to be granted. This examination is done through procedure which necessarily is fairly complicated, because it is a difficult problem to handle. The office is divided at present into 63 divisions, each division consisting of a chief and several assistants. To each division is assigned certain specific types of inventions. Thus, if you file an application for a patent on cotton machinery, it goes to one division; if you file an application for the manufacture of a new engine, it goes to another division.

In these divisions each assistant is more or less a specialist in his own narrow field. The case will be placed on the proper desk, and this assistant will do the actual work of examining and determining whether a patent should issue.

In order to tell whether an invention is new, naturally it is necessary to know what is old, so each of the examiners has a complete list of United States patents that have been granted relating to his particular subject. In addition, we have an exchange agreement with most of the foreign countries and procure copies of foreign patents. These are more or less properly classified and assigned to divisions, so that an assistant has before him, not only all United States patents relating to his subject, but all foreign patents as well. There are many patents taken out in the United States which are also taken out all over the world, and there are many patents taken out in only one country.

In addition to these files, most of these assistant examiners have something of a library containing magazine literature or textbook literature relating to their individual subjects. Of course, in some subjects there are few textbooks, and in others the textbook is the chief source on which they rely.

The man who makes the actual search to determine whether the invention presented to him is new or not, must first read the specifications in the application, — he must understand what is there. If he can not understand it, he writes to the applicant and says, in effect, "You must correct your application and tell me exactly what the invention is." The only way he can be relatively sure that he is granting a patent for something new is for him to have

before him all the old matter. The statute therefore provides that the Commissioner of Patents shall have also a so-called classification division of technical men, whose function it is to go over United States patents, foreign patents and literature, and to separate out and send through the proper channel everything which relates to the different inventions.

Just here is located one of the important defects of the patent system at present. Because of false economy for many years the Patent Office has not been properly provided with funds to make this classification. The result is that the United States patents are not properly classified, and for foreign patents the classification is really extremely poor. As a result it requires almost eight months to get a patent.

If a man has before him all the data relating to a subject, he can go through it in a much shorter time than he could if he must go to the library and look through all the related books, instead of at the page selected for him. If he has a group of foreign patents to go over and they are carefully classified so that he can look at a few pages and get the prior data, it will take much less time than if he has to go through all the literature.

An *invention* is often made up of several steps. Ordinarily a man gets an idea — that is, a mental concept. He may then disclose it to some one else. He has done something toward showing that he has an invention. He may make a drawing of it, but frequently does not know whether it will work or not. He builds a machine, and then knows definitely that it works. This is what is called a reduction to practice. When he files an application in the Patent Office, he gets what is called a technical reduction to practice.

The Patent Office system has another serious defect in that the information which the public wants, which is after all the whole foundation of the patent system, is not properly distributed. There are many inventions which have been patented, but which nobody knows about and nobody sees. The facts are buried in the files of the Patent Office.

Finally, when the examiner reaches a favorable conclusion, the patent is allowed. That does not mean that a patent issues. A notice of allowance is issued, which merely states that the Patent

Office is satisfied that the patent should be granted. But the statute provides that within six months of that time the applicant must pay an additional final fee or printing fee of \$25. If he pays that fee — and it is increased if he has more than 20 claims — within the six months' period, the patent issues. If, however, he does not pay it within the six months' period, he has another six months in which he may refile or renew his application, paying again the original filing fee, and then the application will be delayed further, possibly by an additional examination.

A patent is a monopoly, and its owner has the right to exclude others from the use of a patented invention. A patent gives no one the right to manufacture anything. Every one has a natural right to manufacture anything if he does not interfere with the rights of some one else. But if one man is granted a patent for a book in which the leaves are sewed together at the back, he is the only one who can exclude everybody from making a book in that particular way. Now if a new feature appears, such as a book sewed in the back and with a hard board binding, that is an improvement upon the general idea of sewing the leaves together. The man who gets the patent on the hard board binding can prevent every one, including the inventor of the sewed book, from using the hard board binding, but the inventor who has the sewed book patent can prevent the second man from making any book with a sewed back, either with a hard board binding or without. When the patent issues, the Patent Office makes no effort to determine whether the invention which the man describes will infringe an earlier patent. It frequently happens that a man has a patent that he thinks he has a right to go ahead with, when some one who has a patent anterior to his sues him and endeavors to prevent him from manufacturing. A true monopoly is weakened to some extent in such cases.

One of the chief causes for delay in the Patent Office is the so-called interference procedure. Of the 70,000 or 80,000 patents filed every year there are from 3500 to 4000 inventions to which claims are made by two or more persons. Two men, one of whom may live in Boston and the other in San Francisco, may at different times invent the same thing. They both file applications for a patent. If both applications are pending, obviously they can not

both have patents. The statute provides that the patent is to be issued to the first inventor.

An interference is then declared between the two inventors. Each is allowed to file an affidavit stating definitely the date when he made his invention, and a description of how he proceeded with it. There may occur a series of miscellaneous procedures to determine exactly the issue between the parties, and then each party is given the right to take testimony to prove his case, to show who was the first inventor, and to show what each one did. After that is done, each inventor has an opportunity to be heard in the Patent Office before an examiner of interference, who determines on the evidence before him which man he thinks is the first inventor, and awards the patent to him.

By intensive publicity, costing many hundreds of thousands of dollars, the great industries of the country have tried to create the impression in the popular mind that all worth-while inventing is being done in their research laboratories, and that it is useless for individuals to attempt to experiment, study, and invent new devices. In other words, a form of patent competition has grown, which has allowed the wealthy organizations with much capital to compete in laboratories and litigation to their advantage, thus discouraging the progress of free inventive activity.

Sometimes a company will buy and pool a number of patents and not use any of them during the entire patent period. This gives a virtual monopoly to the one owning the patents. For this reason the great industrialists of the country and the majority of the profession are against compulsory licenses. One company makes it a practice to find out just what patents are being issued for its type of industry; it then buys them all and pools them, and holds them and continues to use the old processes that perhaps are not as economical from an industrial standpoint as the new ones.

**Inventions.** It will be interesting to consider some of the inventions of textile machinery, although it is obviously not possible to give a complete account of the many developments.

The history of the invention of power machinery for textile manufacture illustrates the difficulties of granting patents. The equipment for carding, spinning, and weaving was very simple,

quite similar to that used by the Egyptians, with the exception of the spinning wheel, which replaced the distaff in the 16th century.

A series of inventions of cotton machinery between 1760 and 1808 practically revolutionized the entire industrial system of Europe and America, and precipitated the so-called Industrial



SPINNING BEFORE ARKWRIGHT'S TIME

Revolution. The changes in the manufacture of cotton reflect very clearly the effects of the Industrial Revolution, not only upon production but also upon social and political institutions.

One of the first inventions was the fly shuttle, which made it possible for one weaver to weave a wide breadth of cloth that formerly required two weavers. Since the invention of the fly shuttle increased the production per worker by 100 per cent, it naturally meant more cloth woven for the world. This increased weaving production necessarily implied an increase in the demand for yarn, which outstripped the capacity of the hand carding, the spinning wheel, etc. The necessity for more yarn led to the invention of the spinning machine by Richard Arkwright, as described on pages 182 and 184.

Arkwright represents an early type of manufacturer and capi-

talist who developed our factory system. He was not a striking example of high moral standards and sterling honesty, but he possessed qualities of leadership — perseverance, unity of purpose, ability to handle men, and knowledge of the principles and possibilities of power machinery. He did not invent the machines he claimed in his patents as his intellectual property, but he did utilize them in skillful combinations. Arkwright was the one who was able to commercialize the idea of spinning machinery, and he erected the first mill.

The original ideas of the spinning machine came from a group of craftsmen, including Thomas Highs, a reed maker for looms; John Kay, a clock maker; John Wyatt, a carpenter; and Richard Arkwright, a dyer of hair. It was only through the combined efforts of all that the machine was developed. Most of these inventors, like Richard Arkwright, were not men with a high moral purpose, but acquisitive and self-seeking. Arkwright had vision fully to appreciate the economic possibilities of machine production.

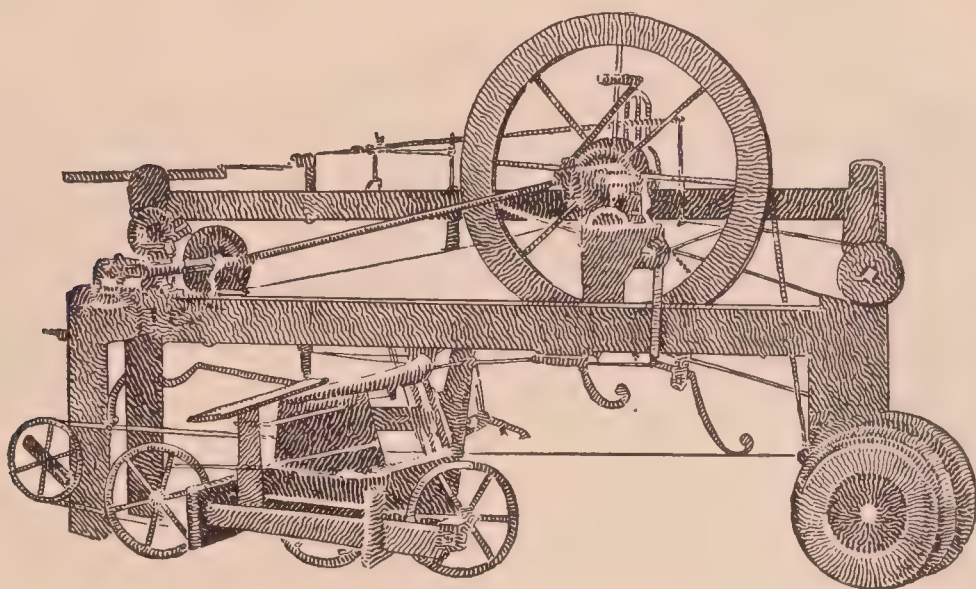
He was granted a patent for a spinning machine in 1769, but lacked financial backing to place the machine on the market. After a few years the bankers became interested and provided capital. The financial results were not encouraging at first and the bankers withdrew aid, but wealthy manufacturers who had been observing the machine came forward with aid. Labor difficulties — opposition on the part of the workers to the introduction of power machinery, which meant replacement of hand labor — caused many riots and retarded the introduction of the machines in the mills.

In 1771, Arkwright erected a mill in Crawford, England, on the river Derwent. The water supplied the power to the mill, since the steam engine was not used until twenty years later. In 1775, Arkwright was granted a patent covering a complete system of machinery for power carding and spinning. With two patents, he had practically a monopoly of machinery required for cotton manufacture. Not being able to meet all the demands for high grade yarn, he granted licenses for use of his machinery.

The majority of competitors were perfectly willing to use Arkwright's inventions and machines, but many objected to paying the license fees and attempted to make small changes and modifications in the machines, thereby escaping from the fees. Arkwright

brought suits against nine offenders, but the defense won on the ground that Arkwright had not fully described his inventions as required by law. For a few years litigation took place, his competitors finally united, and there developed a trial with imposing lawyers on both sides in which it was shown that Arkwright had secured his ideas from others.

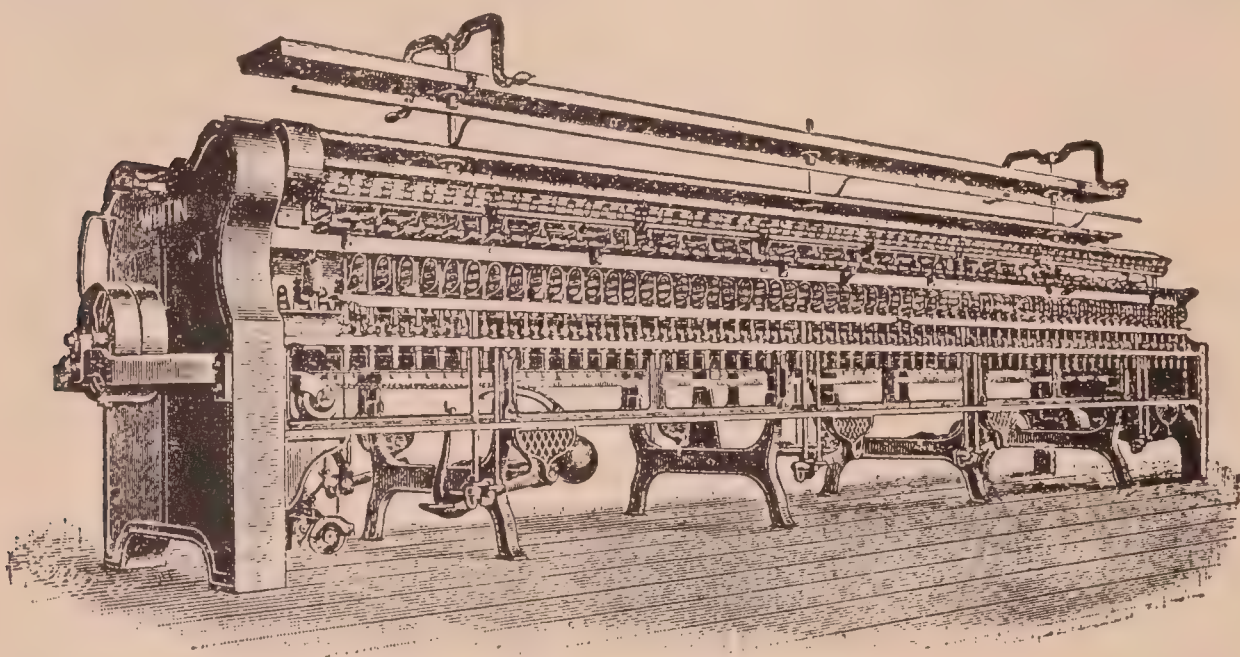
**The Mule Frame.** Hargreaves' spinning jenny and Arkwright's roller spinning frame were followed in 1779 by Crompton's spinning mule, one of the most efficient machines, even to this day, that can



CROMPTON'S SPINNING MULE

be found in the whole range of the textile industries. Arkwright had already attained great success in the production of yarn by the extensive application of the principle of pulling out the loose rovings by two or more pairs of drawing rollers. Hargreaves had also shown how to produce a thread by attenuating the fiber by means of the traveling carriage of the jenny. Crompton, however, laid the foundation of the present system of mule spinning by combining the essential features of the two machines and blending them into one. He applied the principle of roller drawing in order to attenuate the loose fluffy strand, and he utilized the traveling carriage as a reserve power with which to improve the quality of the thread and draw it out finer. Whatever Arkwright could do on his roller frame, the Crompton mule could also do, and something additional. However much Arkwright improved his yarns by better carding and drawing, the mule could always step in and

give a finishing touch that was utterly beyond Arkwright's reach. As it was at first, so it is now: the mule as a spinning machine can do anything that the ring frame or any other frame can do, and at the same time turn out a better product. It combines in one machine both the new and the old principles of spinning, both the roller draft and the spindle draft in one and the same yarn. The mule, however, produces a slackly twisted yarn and is less productive than the modern ring frame.



RING SPINNING FRAME

Crompton's original machine, made in 1779, contains every motion, or at least an equivalent for every motion, of the most complicated and perfected self-acting mules of the present day. Shortly after the invention was given to the public it began to be improved in various ways, until today it embodies the inventions of hundreds of the most intelligent men ever connected with any industry in the world's history. It is universally acknowledged to be one of the most wonderful and useful devices ever invented. The actual operations of making a thread are, however, practically the same as left by Samuel Crompton over a hundred years ago. It is only in the details of mechanism involved in making the machine work automatically, and in greater productiveness, that the long line of inventors has been engaged.

Today, such is the great size of self-acting mules, that they are often found 120 feet long and containing 1300 spindles, each one

spinning and winding 64 inches of thread in about 15 seconds, or a total of nearly 5,000,000 yards per day. One skilled workman and two boys are sufficient to give all the attention such a machine requires.

**The Ring Frame.** At present there are two kinds of machines in use for spinning wool and cotton — the throstles in addition to the mules just described. The throstle, which is an extension of Arkwright's original spinning frame, is employed for spinning warps because it is solid and firm. It maintained an important position in the spinning industry until a comparatively recent date, when it was superseded by the ring frame. The ring frame is a modified throstle, and preserves the latter's chief features. It differs mainly in having the flyer replaced by a ring from which the machine takes its name. The ring is from one and a half to three inches in diameter, grooved inside and out, and is fitted with a flat steel wire shaped like the letter D, called the "traveler." Its office is to serve as a drag upon the yarn, and by means of it the yarn is wound on a bobbin. Its size and weight depend on the counts of yarn to be spun; coarse yarns demand the largest rings and heaviest traveler; and the finer yarns the opposite. The ring frame is employed (particularly in cotton manufacture) for spinning both warp and weft from the lowest numbers up to about 50's or 60's. In the United States the ring frame is the leading spinning machine at the present time, its use being greatly on the increase and its popularity growing daily.

**Looms.** The increased production of yarn naturally caused the invention of a power loom. Cartwright, in 1774, constructed his power loom to apply either water power or steam to weaving. It was not at first a success, but in 1803 improvements by Thomas Johnson in dressing warp before it was put into the loom, and his devices to take up the slack in the cloth, eventually made the power loom practical. It became generally used in the cotton industry by 1815, though it did not make much headway in woollen or silk before 1835. Later devices were added to the loom for weaving fancy fabrics in design. Automatic devices then followed, as shown by the Northrop loom with automatic feeding shuttle head and drop wire connections; that is, when a thread breaks, a wire drops, stopping the loom.

Silk weaving is still far from automatic. The weaver must keep the shuttle filled, clean the warp, keep the threads straight, and see that there are no imperfections.

The most important improvement in the loom was the attachment for weaving elaborate designs called a Jacquard. It was devised by Joseph M. Jacquard. It is not a loom, but an appendage to looms, which, in the weaving of figured fabrics, automatically selects the warp threads and raises them when necessary. It was the damask loom that made possible the Jacquard. In fact, the main difference between them is that in one human skill and patience accomplish what the other does automatically. The damask weaver puts in thread after thread by hand — over, under, through warp as the pattern requires. The Jacquard loom has weighted strings passing over a pulley to fall upon perforated cards. Each motion changes their position and lets some weights go through the holes, and draws up the warp threads to be skipped by the woof, while others strike the card and leave their strands in place to be regularly woven. The invention has been applied to many branches of weaving, and has worked wonderful improvement in all.

Jacquard was the son of a poor silk weaver of Lyons, and was born in 1752. He was first employed as a bookbinder, afterwards as a type-founder and cutter; but, on the death of his mother, he assisted his father in weaving, and when he inherited a small patrimony upon his father's death, he used it in setting up a silk factory. This proved unsuccessful, mainly because his time was spent in attempting various improvements in the processes with which he was acquainted. For want of a better occupation, he was at last forced to become a lime-burner and afterwards a charcoal-burner, while his wife supported herself at Lyons by plaiting straw. The machine that afterwards rendered him famous is said to have been conceived in 1790, but its execution was delayed by the breaking out of the Revolution, which drove him into the ranks, first of the insurgents, and then those of the Army of the Rhine. After seeing some active service, in which his young son was shot down by his side, Jacquard again returned to Lyons, where he succeeded in finding work. He saw in an English newspaper that a Society of Arts had offered a prize to any one who could invent a

plan for weaving nets by machinery. He set his wits to work, and for his own amusement soon produced a loom adapted to the purpose. He made no attempt to obtain the reward, and after showing his invention to a friend, he put it aside and for some time forgot it.

To his surprise, he was one day sent for by the prefect of the department, who inquired about the machine and requested him to make another, since the original had been lost or destroyed. This he did, and a few weeks later was summoned to Paris and introduced to Bonaparte. "Are you the man," asked Carnot, the minister, "who pretends to do what God Almighty can not do — tie a knot in a stretched string?" Jacquard answered that he could do, not what God could not do, but what God had taught him to do. He still labored at his silk-weaving machines, and in 1801 a medal was awarded him for an invention which he exhibited in Paris, whereby one workman per loom was dispensed with in the weaving of figured silks. He was summoned to Paris again, and explained his device to Napoleon, who rewarded him with a pension of a thousand crowns, gave him employment in the Conservatory des Arts, and thus enabled him to exercise his ingenuity in other ways. At the conservatory was stationed a loom of Vaucauson's, which suggested various important improvements in his own, which he perfected in its final and present state in 1803.

The emperor encouraged the owners of silk factories to adopt the new loom, and many were set up at Lyons during the early part of 1804. To Jacquard's consternation, the new invention was fiercely opposed by the silk weavers, many of whom it threatened to deprive of livelihood. The Conseil des Prud'hommes, which in our age might be described as a company of walking delegates, and whose business it was to watch over the interests of the Lyonese trade, seized his machines and made kindling wood and scrap-iron out of them in the public square. "The iron (to use Jacquard's own expression) was sold for iron — the wood for wood, and the inventor was delivered over to universal ignominy."

The invention was too valuable not to have found its way into other countries, which by its means were enabled to rival and even to surpass the products of the French looms. Then it was that the Lyonese weavers saw the folly of their opposition and condescended

to adopt the invention of the man they had so cruelly persecuted. Many years before his death, which occurred in 1834, the inventor had the satisfaction of seeing his loom in almost universal use, and, as a consequence, his native city rapidly advancing. The Jacquard apparatus is now extensively used throughout the whole of the silk, worsted, and cotton manufacturing districts of France, England, and America. In 1876 a French manufacturing firm produced one of the most extraordinary specimens of silk weaving that probably has ever been executed. It is a portrait of Jacquard woven on a white ground with colored silk, representing that extraordinary man in his workshop, surrounded by his implements, and planning the construction of that beautiful machinery which now, in its increased perfection, renders a fitting testimony to the genius of the inventor. The work was woven with such truth and delicacy as to resemble a fine line engraving. There were a thousand threads in each square inch in both warp and weft.

The Jacquard loom is used solely for weaving figured goods. In this loom a chain of perforated cards is made to pass over a drum, and the strings by which the threads of the warp are raised, pass over an edge with a wire or leaden weight of small diameter suspended from each. These weights at each stroke of the loom are presented to each successive card and some of them are intercepted by the card, while others pass through the holes therein, the latter thus determining which threads of the warp of the figure appear on the fabric.

**The Power-Loom.** The first power-loom built in this country for weaving broad silks was made by William Ryle, of Paterson, N. J., in 1842, or two years after the loom for fancy weaving invented by Crompton. The introduction of the latter loom, which differed from the ordinary plain-weaving loom in having drop shuttle boxes, marked an important era in the domestic woolen industry, and in its developed condition is largely used at the present time. The building of the silk loom inaugurated an industry that has since become one of the most important branches of American textile manufacturing.

Of all the American inventors who have contributed to the textile machinery of the age, and whose inventions have been of universal value, Erastus Bigelow is probably the most prominent. His

application of power to the loom for carpet weaving, which was brought out in 1848, not only served to revolutionize the manufacture of carpets, but gave an impetus to this branch of weaving such as had been given by nothing else since the introduction of the Jacquard apparatus. Heretofore, carpets were woven on hand-looms, which naturally made their production limited and the rugs expensive and out of the reach of ordinary people. The invention of the carpet loom brought within the reach of all, even the poor, the advantage of a beautifully colored carpet.

Bigelow's first loom was for weaving ingrain carpets, and was followed by his perfected loom for weaving the heavy and gorgeously patterned Brussels and tapestry carpets. The next great stride in machinery for carpet weaving came in 1860, when Halycon Skinner patented a loom upon which the hitherto unattainable weave of Axminsters and moquettes could be produced. Since then many improvements in detail have been added and the looms for carpets and upholstery fabrics are today the most perfect mechanisms in use, as well as among the most complicated.

**Knitting.** The art of mechanical knitting is an English invention. William Lee constructed the first knitting-frame in 1589. In accordance with the policy of the British people to keep their colonies dependent upon the mother country, there was a high penalty set by law for the exportation of knitting machinery, and woolen stockings manufactured on Lee's frames formed an important item in the English trade with the North American Crown colonies.

The earliest American record dealing with knit goods dates from 1689, and can be found in the documents relating to the colonial history of New York (ix, 408 and 409). There a government official states that in bartering with the Indian tribes at the English Fort Orange (the present Albany, N. Y.), it was customary to give six pairs of stockings for the fur coat of one beaver, while the French at Montreal asked two beavers in exchange for the same amount of the commodity so highly valued by the natives.

In the same year, 1689, German immigrants from the sect of the Mennonites landed farther south in America and settled near Philadelphia. They erected the first stocking frame in America at Germantown, Pa. Undoubtedly these settlers, coming from the

borders of the Rhine, had acquired the trade skill from their neighbors in Brabant, to which section some frames had been previously smuggled from England.

Thus the knit-trade monopoly of the British in America lasted exactly 100 years and was broken by Germans. In 1695 there were about 1500 knitting machines active in and near London. Eighty years later (1775), there were already 150 knit-goods frames working in Germantown, Pa., and near the Brandywine Creek. In 1865 the annual production of woolen hosiery in Germantown is reported by reliable sources as amounting to \$10,000,000. The American as well as the German competition in knit-goods manufacturing caused an industrial crisis in England. In 1864 the hosiery manufactures in London had declined to only 74 machines. The English knit-goods traders, in order to be able to compete in the world's markets, bought their goods in Saxony, where wages were lower and mass production brought about lower wholesale prices.

During periods of industrial depression the English frame knitters by necessity turned to new inventions, and in 1864 William Cotton received patents on the first full-fashioning, flat knitting frame.

During the French Revolution a French civil engineer — Sir Marc Isambert Brunel — had arrived in the United States as an immigrant. His ingenious mind invented the circular knitting frame in 1816, about five decades before Cotton brought out his improvement on the flat knitting frame.

While the English and German manufacturers excelled especially in the development of the flat frame coulier and warp-knitting, the North American nation, with tremendous energy, developed the possibilities of the circular principle in knitting which had been evolved by Brunel during his stay in the States. Up to the year 1925, the seamless hosiery machine production of the United States was leading all rivals in the knitting field in respect to gigantic production and export figures.

The invention of power machinery was first applied to cotton. This was due to the fact that the cotton manufacture was first rapidly developed because more people in the world used cotton. The application of the inventions to woolen and worsted processes was not as easily carried out as in the case of cotton. The spinning,

weaving, and finishing of woollens and worsteds are difficult processes, and it was a long time before automatic machinery was successfully applied to them. Silk was the last textile to be adapted to automatic machinery.

Additional inventions in textile machinery were in the form of devices for refinements — improving the quality of cloth — and higher speed machines to cut production costs.

One of the most striking features in silk manufacture is the multiplicity of processes which a piece of goods must undergo after weaving before it is ready to lay on the counter. A piece may be run over as many as 150 times in various processes after it comes from the loom before it is ready for shipment.

In the silk, as well as other manufacturing industries, it is indisputable that while inventions have multiplied wages, these same inventions and competition have even more remarkably lowered prices, in spite of the fact that the protective tariff rate has remained comparatively level. And in many cases it is only the tariff that has made the development of the industry possible in this country — which has already been discussed on page 376.

**Rubberized Fabrics.** The application of the use of rubber to clothing is illustrated in the cloth called *mackintosh*. The present use of rubber in the manufacture of clothing was discovered and perfected by Charles Goodyear, and although all the patents which he originally obtained have long since run out, his name will always be associated with the practical use of India gum in the trade. It was the use of sulphur combined with heat as a drier of the pure gum that first made his invention successful. Although rubber garments have been in use since 1823, there has been a very marked improvement in the manufacture in recent years. Twenty years ago the only rubber clothing made and worn in this country was the plain, black, rubber-surfaced gingham or cambric garment. The greatest change brought about in the manufacture of rubber clothing has been the introduction of a water-proof cloth garment called a mackintosh.

This is a double-texture fabric — cloth on both sides, with rubber between that is not visible. When made up, the garments resemble fashionably cut coats or cloaks, and are almost odorless. They are either light or heavy according to the quality of the material used.

Mackintosh cloth is prepared by spreading on the cotton or woolen fabric layer after layer of India rubber paste. Double-texture goods are made by uniting the rubber surfaces of two pieces of the coated material. The cloth is then cut in the desired shape for coat or cloak and the seams united by joining the soft material before it cools. There are many other cheaper kinds of water-proof garments made — such as single cloths with a rubber surface — but for durability and style the mackintosh takes the lead, and is said to be used in seventy-five per cent of all rubber garments of a dressy character now sold for both sexes.

A line of water-proof clothing is made of a single gauzy texture with rubber facing. These garments are made from a variety of materials that imitate the latest styles of dress goods. They are also largely made in cambric, cashmere, silk, and wool, in different patterns. Silk garments of this character are not durable, as they are made delicate and tender by the application of the rubber compound, which causes them to tear and crack too easily. The reason given is that the oil in the silk rots the rubber.

**The Sewing Machine.** The sewing machine, like most important inventions, was the result of the needs of its time, and was thought out and brought into use when the demand became acute for more speed and increased production in the manufacture of garments. The poverty of England's seamstresses as told in Hood's "The Song of the Shirt," the need of uniforms for clothing the army in France, and the periodically sudden needs for garments by the whale fishermen of New Bedford and other New England fishing ports, all were reflected in attempts to improve upon sewing by hand. When these various attempts appeared, they attracted but little attention at first, except from those who feared their means of earning a living would be taken from them if a sewing machine became a possibility. The machines of Barthelemy Thimonnier used in sewing uniforms for the army in France were destroyed by a mob, and the development of what promised to be America's first machine (that of Walter Hunt in 1834) was laid aside for fear of taking the bread out of the mouths of the seamstresses.

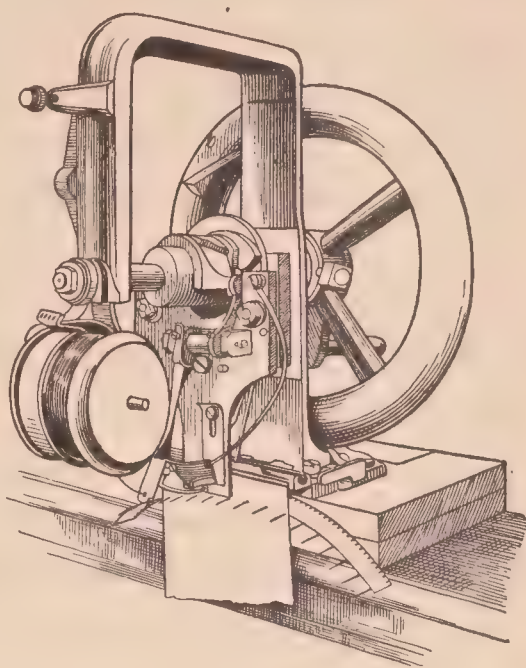
The early efforts to construct a machine to take the place of the human arm and fingers were met with the indifference of the

general public, but certain groups of workers with the needle saw in these inventions a menace to their crafts, and endeavored to destroy them wherever they appeared.

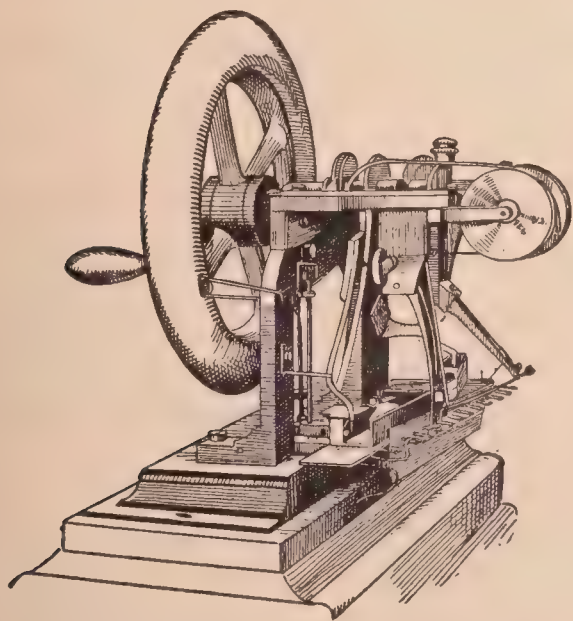
Another portion of the public was amused at the claims made for the freak "Yankee" machines and were curious enough to pay money to see the "contraptions" exhibited in side shows.

While the first idea of a sewing machine appeared in England, the credit for producing the first practical machine belongs to Americans. Most of the early efforts to sew by machinery were based upon an imitation of hand sewing. All such inventions proved failures, because hand sewing is slow and intermittent, as it

is necessary to use a definite length of thread which passes through the cloth its full length at every stitch. This requires the working arm of the sewer to travel a long distance, and to renew the length of thread frequently.



HOWE'S FIRST SEWING  
MACHINE



HOWE'S IMPROVED SEWING  
MACHINE

The possibility of sewing by machinery was practically demonstrated over 100 years ago; but it required the combined efforts of a generation of inventors to improve the sewing machine so as to make it really a labor-saving instrument. Its history is a record of rapid advancement in mechanical movements and combinations of devices which had apparently never been thought of until the close of the 18th century.

Elias Howe patented a sewing machine in 1846. Howe's invention was sold to a corset manufacturer in England for 250 pounds, and the English manufacturer

secured a patent in his own name in England in 1846. He engaged Howe on weekly wages to adapt the machine to manufacturing purposes. Howe returned to America in poverty and found many manufacturers had used his patent rights. Howe brought suit against the men who infringed on his patents and after many years of litigation he secured royalties amounting to \$2,000,000. He died shortly after his patent expired in 1867.

The quarrels over patent rights were by no means confined to Howe, as each individual company was suing all of the others on one claim or another. Finally, Orlando B. Potter, president of the Grover & Baker Co., conceived the idea of combining the various interests and pooling all the patents covering the essential features, which would enable them to control the sewing-machine industry, instead of continually fighting and trying to devour one another. He pointed out that while Howe and the three large companies then suing one another controlled all the basic patents, the pending lawsuits, if carried to a conclusion, might be disastrous to them all. His argument was convincing, and thus was formed the "combination," which for several years was the terror of all unlicensed manufacturers.

The invention of the sewing machine is one of the most important factors in placing modern wearing apparel within the reach of all. When one considers the number of stitches in making a single garment such as a shirt — 20,649, — the value of the machine is apparent.

The rate of hand sewing is between 30 and 40 stitches per minute per operator. The foot-power machine operated by a single person makes 900 stitches per minute, or the equivalent of 30 people working on hand stitches. The power sewing machine operated by a single person makes 4000 stitches per minute — or the equivalent of 133 people sewing by hand.

When we look at the progress made in sewing machines, we might expect them to create a social revolution, for a good housewife by one of the machines will sew a fine shirt, doing all the seams in fine stitching, in a single hour. The time thus saved to wife, tailors, and seamstresses of every description is of incalculable importance, for it allows them to devote their attention to other things during the time that used to be taken up with dull seam sewing.

It is too soon yet to estimate the full effect of the sewing machine upon human life and destiny. It ushered in an epoch of cheap clothes, which means better clothes for the masses — more warmth, more cleanliness, more comfort. The indirect consequences of the invention of the sewing machine reach far beyond our ken. Time was when about half the human race was occupied chiefly in making clothes. When the machines took the vocation away from them, they turned to other employments. The invasion of all occupations by women and the sweeping changes which have taken place in their relations to the law, society, and business can be ascribed in large measure to the sewing machine.

**Minor Devices.** In addition to major inventions of textile machinery, patents have been issued on many minor devices. Various parts and attachments of wearing apparel were originally made by hand, but the 19th century brought automatic machinery that molded, cut, shaped, and finished the device by a series of machine operations. To illustrate: Let us consider the steps in the manufacture of the simple hook and eye: (1) wire is made from the raw material, (2) the wire is cut off in sections of proper length, (3) the piece of wire is bent into a hook, (4) the ends of the hook are bent so as to form the holding loop, (5) the double wire is forced into a hook part. In a similar manner the eye is formed.

**Trade-Marks.** The primary and proper function of a trade-mark, according to definition, is to identify the origin or ownership of the goods to which it is affixed. In this definition, as in so many other things, legal evolution has not kept pace with functional change. Five or six centuries ago it would have been accurate, but not now. The modern trade-mark is a development from, or composite of, two distinct forms of mark: first, the regulatory or production mark, designating source; and second, the proprietary mark designating ownership.

The medieval craftsman, not only in England but throughout Europe, was compelled by statute, by local ordinance, or by the regulations of his guild, to affix his mark, not for the purpose of exploiting his product, but so that by this mark defective workmanship, short weights and measures, shoddy goods, etc., could be traced, and the guild monopoly in production in a certain area could be protected. As to guild monopoly, it meant simply that

if cloth bearing the trade-marks of London cloth workers' guilds were found in Germany, the monopoly of cloth in that area was being infringed.

It might be interesting to note that these merchant marks gradually became pseudo-heraldic devices. They were pseudo-heraldic, because the use of those marks invited the disapproval of the Royal College of Herald's of London, who were of the opinion that "trade extinguisheth gentry," and were exceedingly annoyed to find that these practical merchants were really obtaining the pseudo-heraldic devices without paying the fee for enrollment of the devices at the Herald's College.

Each individual had a different mark, and these marks were regularly enrolled — registered in the books either of the city or in those of the particular guild. They were an identification of quality, not necessarily of inferior quality, but as a clue to the makers so that they might be looked up in the event of inferior quality, and punished. Each guild had its own trade-mark registration bureau.

The individual adopted the mark and then enrolled it in the guild. At first these marks were of a very simple kind. There does not seem to have been much ingenuity about them. They were like cooper's marks. It was only later that the marks became ornate and decorative. Finally, a gradual evolution took place, and the merchant's mark turned into the modern trade-mark, followed by the development of the law affecting these two. Until the nineteenth century, the common law courts of England were practically silent on this subject, except that in the 17th century one action on a case of deceit in the misuse of a trade-mark took place. This is the only case we find mentioned until the famous decision of Lord Chancellor Hardwicke in 1742, when he actually refused to enjoin the infringement of a trade-mark on the ground that in so doing he would be encouraging monopolies.

It is worth while to remember this decision, because, as we shall see in dealing with certain present-day problems of trade-mark protection, the court is still seemingly haunted by this fear of monopoly, whereas actually there is no monopoly involved.

This, however, did not mean, as is commonly believed, that until the 19th century there was no law in England on trade-marks.

On the contrary, there had been developed there, commencing with the Middle Ages, particularly within the courts of the trade guilds, an elaborate body of doctrine on this subject, applicable to particular industries in particular localities, such as the clothiers of London. This body of doctrine not only included the right to protect one's trade-mark as a symbol of good will, but also to sell it in connection with a going business, to rent it, and to bequeath it by last will and testament.

The theory of the American and English common law and equity is that the trade-mark must be used in connection with a business in order to be protected. It can not exist at large or in a vacuum. It is an instrumentality of commerce, and commerce implies business, and business implies a going business, not merely a theoretical one.

With the breaking up of the guilds, the delocalization and unification of industry, the expansion of the Industrial Revolution, the growth of advertising, and the development of national and international trade, the relation of producer to consumer changed and the significance of the trade-mark changed accordingly. Goods passed from the producer to the consumer, through perhaps a dozen different hands — agent, jobber, purchasing syndicate, retailer, etc.; furthermore, in many industries the ingredients or materials comprising the goods upon which the trade-mark was ultimately used were assembled from, or were the aggregate of, innumerable other sources of which the producer knew nothing. The trade-mark ceased to be a mark of ownership in any sense, and remained a mark of source or origin only in a very limited sense. With regard to the source or origin of such well-known trade-marked articles as "Tiffany," "Fruit of the Loom," etc., the courts have indulged in the paradox of admitting that even though the actual or physical source of the goods is unknown, or is purely anonymous and may mean nothing to the consumer, the misuse by an infringer of such marks deceives the consumer as to the source or origin of the infringer's goods. The fact of the matter is that under modern conditions of marketing and large-scale advertising, the trade-mark is not merely an indication of source or origin; nor is it merely used as a distinguishing mark or symbol — a commercial signature. It is also a symbol of good will, and is an agency for the creation and perpetuation of good will. It

reaches over the retail merchant's shoulder and offers the goods to the customer; it is the most constant, active, and extensive salesman in the employ of the manufacturer today, representing



*Give your finished silks . . .*

**A SOFTER, FULLER HAND  
GREATER TENSILE STRENGTH  
BETTER LUBRICATED FIBRES**

*By using*

**SULPHONATED OLIVE OIL S-370**

a highly sulphonated, *pure* Olive Oil (entirely free from adulterants). Oil S-370 assures you of the best results because it is:

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ADVERTISEMENT FOR SILK MANUFACTURERS

Note the trade-mark and appeal to logic

a tremendous investment in ingenuity and advertising, of which the taxing statutes have taken the keenest cognizance. It has, at the same time, this feature of the old guild production mark — it is a guaranty to the consumer that the goods bearing it will give

him the same satisfaction or the same service that other goods bearing this mark have previously given him.

The modern concept of the function of the trade-mark is fundamental in attacking various problems. There is, for instance, the problem of the use of similar marks on dissimilar goods, which is one of the most common and important questions with which trade-mark litigation deals today. The old notion was that there could be no unfair competition without actual market competition.

The point is that the modern trade-mark, particularly the coined or fanciful one, which has impressed itself on the public mind through the ingenuity and investment of its owner, should in simple justice receive the broadest possible protection. There is no justification in law or in morals for its misappropriation or for its application to any goods other than those of the owner of such marks as "Celanese," etc., and not only our courts but those abroad are more and more realizing that it is the first comer in the field who is entitled to all consideration in this matter.

A movement has been started to protect corporations and companies that spend millions of dollars in advertising a particular product under a trade-mark which is nothing but a symbol of good will, and to permit no other branch of endeavor to use it. If, however, every particular name that is used in business were copyrighted, the language would not be able to supply enough names.

Therefore protection should be limited as much as possible. The public, that is, the consumer, is paying for the trade-marked product, and is the one who pays the bill for advertising. To permit an owner who had reaped a tremendous fortune out of the trade-marked articles to extend that mark and have a monopoly of that name on dissimilar products is going farther and farther along the direction of great combinations.

In many cases in recent years, individuals or corporations have sought a trade-mark that was very similar to the trade-mark of some other company by which millions of dollars had been spent in advertising. Such infringements are very hard to decide and to regulate.

At present it is necessary to register the trade-mark separately in each country, and this is an exceedingly expensive and troublesome operation. Indeed, the whole system of trade-mark registration is expensive and unsatisfactory, especially in the United States. The manufacturer must go to a great deal of trouble and expense to register his mark, and receives nothing except a piece of paper which says, "This is *prima facie* evidence of ownership."

Every trade-mark application filed in the Patent Office receives official action within 30 days. If the trade-mark application is found to be proper, the present law requires the publication of that



TRADE-MARKS OF DIFFERENT TEXTILES

fact in the *Official Gazette*, and after it is published in the *Gazette* the Patent Office must wait 30 days for opposition. Then a new search is made, and if no opposition occurs, the mark is sent to the Government Printing Office. It takes the Government Printing Office four weeks to print it. About 18,000 applications are received annually for trade-mark registration.

The Hague Convention grants what we call "national treatment." That is to say, a national of the United States in any country which is a party to that convention has the same rights in that country as its own nationals, and the nations of those countries correspondingly have the same rights here. In each case any one wanting protection for trade-marks or patents must carry out all the requirements of the law of that particular country, so that if each country requires registration, then in each country the American citizen must go through the formalities of registration.

It was formerly the custom to charge citizens of other countries \$300 to obtain a patent, and at one time the United States charged the subjects of Great Britain \$500. Under this international agreement, however, we are bound to treat the nationals of the countries signatory to these conventions the same as we do our own nationals.

This applied to both trade-marks and patents. The fee for registration of trade-marks in the United States is \$15.

**Protection of Designs.** We have discussed the value of patents and trade-marks. There is another important subject closely related to them that is very important in the wearing apparel and textile field — that is, the question of the protection of designs of fabrics and of individual parts of wearing apparel as well as the design of the whole costume.

All over the world there has been a tendency for low-grade manufacturers and designers to steal the designs of fabrics and individual wearing apparel as well as the design of the whole costume. This stealing is called “design piracy” and is practiced by low-grade designers and manufacturers on the well-established manufacturers and designers who spend large sums of money creating their designs.

Some say it is possible to secure protection under the copyright law. The copyright law is founded upon two principles. One is that the thing that is protected by copyright — the thing that the courts will protect — must be an original work, not necessarily absolutely new, but not capable of being held to be worthless. In that respect the copyright law differs from the patent law. The patent law requires a thing to be both new and original. Another difference is that the copyright law only prevents copying, but the patent law prevents the manufacture, sale, or use of any article which impedes the patented invention. These distinctions between patent law and copyright law are fundamental and should be incorporated in a pure copyright bill, because it is the experience of centuries that work that is protected by copyright need only have the characteristics of originality.

The law of copyright in the United States demands that the government must search and determine whether a design is original before it can issue a copyright. This requires from three to six months, and since wearing apparel is seasonal, its period of usefulness is over by the time the question of copyright is settled. Hence the need of legislation to protect manufacturers and designers in their ideas as much as others are protected in their property rights.

We saw in Chapter II that some psychologists assert that there are no original designs. The retail dry goods stores have opposed

design protective legislation on grounds that it would mean constant litigation over the question of the protection of the designs of textiles and wearing apparel.

Foreign countries are inclined to protect manufacturers and designers more than the United States. This is due to the traditions of the countries: foreign countries are inclined to be more monopolistic and the United States more competitive.

The following report shows how the French protect their designers:

It is disclosed in the bulletin of the Protective Association, of which A. Trouyet, of the couture house of Madeline Vionnet, is president, that raids were conducted in March, 1932, on copyists. Models, canvas designs, and sketches were seized. Three small dressmaking houses were visited, and 20 robes, six canvas designs, and 34 sketches were confiscated. Two millinery houses were raided and three hats, alleged to be copies of those of the Maison Lewis, were seized. At the request of the Maison Colcombert, a silk firm was relieved of six pieces of ribbons, and on the complaint of the Maison Alexandrine, a small glove house gave up 25 pairs of gloves alleged to be copies of Alexandrine originals.

Attempts have been made to pass practical design legislation through Congress, so that manufacturers, designers, and others may obtain immediate design registration so as to protect them against infringement for the purpose of minimizing the possibility of design piracy and providing the public with designs which have the stamp of originality and which will continue during the coming season.

Trade organizations such as the Silk Association of America have assisted by allowing facilities for registration of print and woven designs during the past five years.

**Design Registration.** The routine of the United States Patent Office requires several months for the proper registration of a design or trade-mark of wearing apparel. Since designs and trade-marks are frequently seasonal products, it follows that the wearing apparel has been designed, manufactured, and is on the market before the applicant has received notice of the proper registration of the design or trade-mark. This drawback has caused much inconvenience and actual loss of money, as well as stifling the natural development of original designs.

The Silk Association of America founded in August, 1928, a design registration bureau for the purpose of providing a general clearing house for silk designs, and to meet a need long felt in the trade for an expeditious service in design registration.

Speed in comparing with the files designs submitted for registration is consequently an important feature of the design registration bureau's program. Checking, photostating, and filing of designs has been planned so efficiently that the design bureau is able to render a 48-hour service to the trade. The applicant is then informed immediately as to whether the design has been found eligible for registration, and if so, he is given the registered number for his design.

Prior to the opening of the design bureau, much inconvenience and actual loss of money was experienced by silk manufacturers who, having no knowledge as to what designs were on the market, engraved rollers, printed designs, and started to sell their goods only to find that the same or a similar design had already been printed, frequently on cheaper material.

In the short space of time in which the design bureau has been functioning, fifty cases of such duplication have been brought to the attention of the parties concerned and settled satisfactorily prior to processing. Thousands of dollars have been saved to the registrant, and loss of time in promoting the fabric has been avoided.

An intelligent and efficient staff has been trained by the design bureau to search the files rapidly and accurately. All designs submitted are held in absolute confidence, and no one but the design bureau staff is permitted to examine these files.

As soon as designs come in for registration, they are checked, classified, and photostated. Files are then searched, effect on the eye of the ordinary observer or purchaser being the basis by which it is determined whether or not the design is a duplicate of or similar to another design.

If the design submitted is registerable, a photostat copy is returned to the owner together with the original design and a certificate of registration. If the design is a duplicate of another design, it is returned to the owner with a rejection slip. In cases of close similarity, however, arrangements are made, if the parties

involved so desire, for an informal meeting at the Association headquarters to discuss the similarity and to determine a course agreeable to both parties.

Although the design bureau was originally organized to register designs intended for use on costume silks, registration services have been extended, at the request of cotton and rayon manufacturers, to include the registration of designs for rayon and cotton costume fabrics.

The ethical and moral influence of the design registration bureau has been felt widely in the trade during the past year. The bureau has the coöperation of retailers and designers as well as of manufacturers, converters, and dyers. It not only aims to bring about an amicable settlement of cases of design duplication but is at the service of the entire silk, cotton, and rayon industries for registration of designs and consultation on design duplication problems.

Designs intended for printing, embossing, soda printing, or Jacquard weaving on silk, cotton, or rayon may be submitted for registration at the Silk Association of America headquarters, 468 Fourth Avenue, New York City.

Domestic forms are provided for registration of designs intended for processing within the United States. Designs processed outside the United States, if imported as material for sale in this country, may be submitted for registration on foreign forms by the actual owner of the design and material.

To assure registration of designs which are in commercial use, designs which are not reported by the printer as being sent for processing within ten days after registration will be withdrawn from registration.

Registration is open to the entire trade. All designs are registered for two years. The following are the requirements for registering domestic prints, Form 1A :

An engraver's copy of the design to be registered must be sent, prior to processing, to the design bureau together with an application form for each design and information as to fabrics on which the design is to appear.

The name and address of the printer, the name and address of the firm applying, the signature of the firm's officer or employee submitting the

information, and the legal seal, if the applicant is a corporation, must be included in the application. A notary's signature should be affixed to each application in the place designated.

The design number and the number of rollers to be used must be included.

Accompanying each application there should be a check for \$4.00 to cover the cost of registration. If the design is not registerable, a charge of \$1.00 will be made for search and the balance refunded to the applicant.

Jacquard domestic designs must be an original mill sketch sent, prior to processing, to the design bureau accompanied by application form.

Design number, name and address of the mill to which the sketch is to be sent for processing, the name and address of the firm applying, the signature of the firm's officer or employee who completed the information and the legal seal, if the applicant is a corporation, must be included. A notary's signature should be affixed to each application in the proper place.

Accompanying each application must be a check for \$4.00 to cover cost of registration. If the design is not registerable, a charge of \$1.00 will be made for search and the balance refunded to the applicant.

Foreign prints and Jacquards must be an original sketch. Strike-off or sample of material must be sent to the design bureau accompanied by application, to be furnished by the bureau.

If a sketch or strike-off is submitted, it must be followed up within six weeks by a sample of the finished material with the facts as to yardage actually imported for sale in the United States and information as to date of first importation.

If a sample of material is submitted, a full repeat should be shown. In the case of small motifs, a piece at least  $8\frac{1}{2} \times 11$  inches should be submitted. It is well to avoid, whenever possible, sample with red and black color combinations.

Design number, the nature of the pattern submitted (whether sample or sketch), number of colors, fabrics on which the design is to appear, verification of the right to the exclusive use of the pattern in this country should appear in the application.

The name and address of the firm applying must be included together with the signature of the firm's officer or employee who completes the information, and the legal seal if the applicant is a corporation. A notary's signature should be affixed to each application in the place designated.

Accompanying each application must be a check for \$4.00 to cover the cost of registration. If the design is not registerable, a charge of \$1.00 will be made for search and the balance refunded to the applicant.

Labels designed for use on wrappers of silk, cotton, and rayon fabrics printed from registered designs may be obtained from the design bureau. The labels state that the design has been registered with the design registration bureau and provide a blank where the registration number may be added.

Use of these labels on fabrics of registered design is a means of giving the retail buyer and consumer an added assurance that every effort has been made to protect the exclusiveness of the design.

Rumors of design copying are frequently circulated in the market. When definite complaints are made and the bureau is supplied with the available facts, investigation is made. It is necessary, however, that the design registration bureau be informed promptly of such cases, and that information be reported on especially prepared blanks supplied by the design bureau and which contain questions to be answered by the complainant.

In several instances of such complaints it has been possible to stop the duplication of designs by mutual agreement of the parties involved. In all cases of duplication it is desirable that an accurate statement of facts be kept in the design bureau's files as a matter of record and reference for the trade.

The Fashion Originators Guild of America, Inc., composed of originators in the textile and apparel fields, is seeking the coöperation of the retailers in the movement to protect and popularize original styles, on the basis that such a movement represents the best opportunity to do a profitable business.

"Fashion," which is of utmost importance to women, has almost entirely lost its significance. This is not due to economic conditions alone, for even in 1929, the peak year, the down trend had already begun. The real cause is that an overwhelming percentage of all promotional effort and advertising expenditure has been devoted to exploiting imitations of style, imitations of design, and imitations of quality, with the result that women have become so confused that they no longer recognize originality — the keynote and basis of all fashion.

To remedy these conditions, the Fashion Originators Guild of America, Inc., has been formed. Its purposes are as follows: (1) to revive woman's interest in fashion, (2) to stimulate her desire for originality, (3) to impress upon her that fashion and quality go

hand in hand, (4) to overcome the mistaken idea that an imitation can replace an original.

To accomplish these purposes the Guild intends to employ an extensive advertising campaign in metropolitan newspapers and leading fashion magazines.

Few people realize the expense attached to developing designs of fabrics, wearing apparel, and complete costumes. High-class designers and manufacturers know that design is a powerful factor in value, especially in wearing apparel. It is a well-known fact that designers and manufacturers must be encouraged to do their best work. The foreign countries that have protected designs have the finest quality and value. The United States, on the other hand, have not given the same encouragement to their designers and manufacturers, and the result has been that quality and design have fallen in value.

**Fashion.** Fashion is a term that applies to the shape, form, color, and composition of wearing apparel, etc., at a given period. The French use the term *la mode* for fashion.

We saw in an earlier chapter that wearing apparel is not used for a body covering alone, but for artistic and psychological values as well—to make us appear more beautiful or attractive by covering up weaknesses and emphasizing the better points of the human form, and also to arouse our emotions and feelings as the clothing, etc. make us distinctive. In addition, we saw in Chapter II that the eye soon tires of the same wearing apparel, and that frequent or long use of the same apparel tends to make us less distinctive. For these reasons our psychological wants of wearing apparel increase rapidly. Hence producers must provide frequent changes in wearing apparel of varied kinds and designs to satisfy all types of persons of both sexes at different periods of life, at different geographical locations and seasons, and for various occasions.

These changes are carefully planned in design by representatives of the different manufacturers of wearing apparel as follows:

To show how the different organizations making wearing apparel coöperate in developing style, let us consider the style for 1932. Since the year marked the 200th anniversary of the birth of Washington, celebrations were in order. Public attention was centered during the year on the life of Washington. Hence the central

theme for the style tendencies for the year was expressed as follows in a fashion résumé early in that year :

The inspiration of the Washington bi-centennial celebration, expressed in bright red, white, and blue shades and military effects is seen in the fashions which will be featured in 1932.

The association's color chart for 1932 shows a range from black through a variety of blues, particularly the cadet and bright navy shades, two beiges, two browns, bright red, green, orange rust, maize, and various accent colors.

Bérets, shoulder capes, shining buttons, and shorter skirts for daytime will heighten the military effect.

The models displayed indicate that the silhouette is slightly more molded than last season, and generally more youthful. The fashion experts state that bell-boy jackets, tight waists, built-up waistlines, high necks, military trimming, exaggerated shoulders and sleeve fullness at the top will accomplish the desired effect for the youthful figure.

For the mature figure the effect will be accomplished in simulated high effects, surplice closings, adjustable waistlines, cowl necks, drop shoulders, sleeve fullness below the elbow, and discreet softening touches.

Jackets, which in their simplest form are little more than scarves, are an integral part of the season's dress. They range from bolero scarfs to finger-tip lengths. Collarless coats and suits which require separate scarfs are also important. Various fabrics, but especially novelty furs with both long and short hair, beige and gray fox, and a new leopard-stenciled lapin will be seen in these scarves.

Fabric types and textures essential to the new silhouette will find ribbed weaves, corded effects, diagonals, rough surfaces, serges, and flannels, a wide variety of silks in crinkly effects, dull surfaces, some smooth surfaces, many simulated hand knit, and crochets predominating.

Hats this season will be tilted over one ear, revealing clusters of curls on the uncovered side. Turbans and straw hats with broken lines appeared in the display yesterday, though the béret note still predominated. In shoes, the ghillie type, with high ankle lacing, was the most popular model for sports wear. Tailored opera pumps and oxfords will continue as favorites for street wear, the models indicated.

Cowl necks and covered shoulders were features of the evening frocks, and the bridge frock was distinctly shorter. Several full-length evening cloaks were shown.

All the day dresses were more abbreviated than last season.

Accessories carried out the gay military note, the red, white, and blue theme being used repeatedly.

Another seasonal report on styles shows the popularity of mesh fabrics.

In order to meet the fad of the *modiste* founded on recent medical claims of the beneficial influence of direct sunlight on the body, you can practically clothe yourself, from toe tips to hat crowns, in things that will give the breezes and you a break this summer. Mesh upon your hands and legs, perforations in your shoes and hat crown, and a papery lightness in your jewelry. Just as long as you keep the soles of your feet on solid leather, you may go as far as you like with the open-air idea.

Some of the smartest summer hats are those with mesh crowns. They may be afternoon hats, with wide straw brims and crowns of starched crocheted linen or mesh for the crown. They may be tiny knockabout hats with both brim and crown of soft crocheted wool. The mesh *bérets* are being done in linen now and are made so shallow that they merely cap one small corner of the head. But they are cute and inexpensive and grand for active sports costumes.

Some of the crocheted caps have stunning scarfs to match. The linen crocheted scarf is one of the newest. It is heavy in weight, but done in a cool-looking openwork pattern. Two of these scarfs in contrasting colors — deep blue and yellow, for example — twisted together about the neck will do a heap for a white sports costume.

Then there are gloves made to match the hats, too. If your hat crown is of plain mesh, you can get plain mesh gloves. The bracelet ones are good looking. If the crown of your hat is of a fancy crocheted weave — maybe starched — you will find gloves made with matching cuffs of the same openwork fabric.

Some of the other open-air tricks of the season are the silk mesh gloves in pastel shades, fastened with two pearl buttons, for evening; the crocheted wrist-length gloves for sports that look like children's winter woollens except for the air holes; the perforated pigskin gloves for golf, with holes for the knuckles; the perforated felt outfit, with sleeveless jacket, bag, and gloves to match; the many mesh sweaters — one in Roman stripes, with a polo shirt neckline, struck our especial fancy; the fine hair-net-like mesh stockings, to be worn in ivory with white shoes, or in pale summer pastel shades with sports frocks; the shoes of perforated kid; the shoes of cotton mesh; and the shoes combining various types of fabrics, always with some air space or meshlike material over the toes.

Style changes in accessories are even more frequent than general costume changes. Leather is the sole material for many of the newest accessories, just as it often provides the main item of

trimming for frocks and coats. It has been most delightfully used by many of the leading designers.

It is interesting to reflect on the ingenuity of those whose mission it is to create a constant succession of novelties. Season after season they turn out new and delightful articles and adroitly sidestep the bizarre or the banal.

The way in which style trends are developed in one part of the costume may be interesting :

The style of the shoe is dominated by fashion. All styles are related, that is, every part of our dress is influenced by the prevailing fashion, ideas of color, fabric, or garment outline. To illustrate: When short skirts are stylish, women wear mannish shoes to harmonize with them; on the other hand, with long skirts they must have a shoe that is neat and small, hence the short vamp. When women wear white in the summer, cool canvas shoes spring into favor; when brown and blue dress materials are to be used, tan shoes are worn to harmonize, etc.

After the shoe has been decided upon, it is necessary to work out an exact reproduction. An expert model maker, called a last maker, produces a last, a wooden model of the shoe. In order to do this, it is necessary to lay out certain plans or specifications for the details of the manufacturer of the shoe. There are certain parts of all feet that have fixed measurements.

To illustrate: For each size, the length of the shank, that part of the sole of the foot between the heel and ball, is always the same in every person's foot. The part of the foot back of the ball or large toe joint conforms to certain fixed measurements. These definite measurements form a basis by which the last maker originates new styles by shortening, lengthening, widening, or narrowing the space in front of the toes, but always retaining the true and fixed measurements of the back of the last.

When the last maker desires to produce a new style, he takes an old last, and by tacking pieces of leather on some parts of it (front of the toes), he builds it up and cuts off other parts. This patched-up last is taken to a special machine (lathe), where a number of duplicates are turned from a block of wood.

The pattern maker is the man in the factory who makes patterns out of heavy pieces of cardboard bound with brass, in the shape of the various pieces of leather required to make the upper part of the shoe.

The pattern maker has found by experience that the top part of the shoe also conforms to certain fixed measurements, and by working in coöperation with the last maker he needs only to change the front part of the vamp to bring out the latter's ideas. With these measurements as a foundation, he puts forth from time to time different style uppers, such as buttons, lace, blucher, fixings, scrolls, straps, ties, pumps, etc. This is the way new style tops originate.

After the manufacturer has approved of sample patterns, the pattern maker receives an order for a certain quantity of patterns to be made over a certain last which is submitted to him. Working on the fixed top measurements and the last submitted as a basis, the pattern maker draws plans for a model pattern. The standard size of a model pattern is size 7 in men's shoes and size 4 in women's. He is also given an order for a certain number of widths; for instance, B, C, D, and E, and he draws out on paper a complete set for each width in the model size. These four sets of model patterns are reproduced and cut out in sheet iron by hand. But from these sheets any number of iron models and any size regular cardboard pattern can be reproduced by a machine.

Wood to be made into lasts comes to the shoe manufacturers in a rough, unchiseled form. The lasts are made of maple wood; hollow forms used by traveling salesmen and window trimmers are made of basswood.

The making of the model of the last is the most exacting operation in the factory. It is produced by a most important machine. The principle of this machine is based on the pantograph; that is, it will turn from a rough block of wood an exact copy of the model last; or it will enlarge or reduce a duplicate of any other size or width. So, from a single model last, such as the manufacturer has decided upon, any number of lasts can be made, of any size or width. The machine itself consists of two lathes. On one is placed the model and on the other the block of wood. The model is held against a wheel by a spring. By adjusting this wheel, any desired width last can be obtained, and by adjusting a bar in front of the machine any length of last can be produced from the block of wood.

The lathe, when in motion, revolves both the last and the model, the model being pressed against the wheel, which is really a guide for the revolving knife that digs into the block of wood and regulates the depth that the knife is allowed to cut. In this manner the model is reproduced from the block, which is also regulated as to size and width by the wheel and by the bar. This machine is so accurate that a tack driven into the model to locate the center of the last is reproduced by a sort of a wooden pimple in the block of wood when finished. The model sole pattern is now tried on the half-finished last to insure accuracy.

One can notice in the figures of lasts that the turning lathe has left stubs of wood on the toes and heels. These must be finished to a "templet." The templet is a measure or guide used to indicate the shape any piece of work is to assume when finished. From the heel and toe of the model, a piece of iron is shaped on an exact arc of that last, and is used on the heeler machine as a guide to form an exact copy of the heels and toes of the model. This machine works very rapidly, and by the aid of an irregular shaped, revolving knife it quickly transforms the toes and heels to the desired shape. The bottoms are again tried out on a sole pattern and the last number, the size, and the width are stamped on.

We now have the last as a solid piece of maple wood turned to the desired shape, size, and width. Were it possible to insert and extract the last in this form from the half-finished shoe, no other steps would be necessary in last manufacture, but inasmuch as the leather is stretched very tightly over this last a little later, it necessitates the introduction of some method that will facilitate a quick removal of the last from the shoe. This is accomplished by cutting it into two parts and making a hinged heel. The fact that the slightest change in measurement changes the size of the shoe necessitates great care in the introduction of the hinge as a part of the last, and in order to insure accuracy and uniformity in all the lasts, they are marked with templets and gigs. The hinge must be placed inside of the last.

The finished last is so constructed that it can be readily inserted or withdrawn from the shoe, and the strong hinge provides the last, when inserted, with the same rigid qualities as though it were one piece. The center of the last is indicated, as before stated, by a reproduction in the side of the last of the tack that was placed in the model. This is the mark that locates the position of all the holes, and it is done by a "gig" in the following manner:

A gig is a piece of steel having cylinders that guide the bit of the boring machine in an exact perpendicular line. This gig, being placed on the last in the position marked by the turning machine, forms the accurate location of the bolt holes that hold the hinge.

After the hinge is placed in the last, it goes to the ironers to have the bottom put on it, if it is a McKay last, and a heel plate if it is a welt.

The bottom is again tried and the plate filled up to the same. The last is then ready to go to the scouring room. In this room the last goes through three operations, first of which is ruffling. This consists of scouring with a coarse grade of quartz. This operation must be carried on so that the sole lines and insteps are not brought into contact with the quartz.

The second operation, medium grinding, is done with a fine grade of quartz, and in this operation, also, the worker keeps away from the toe. The third operation is done with a much finer-grade quartz, the operator going over the entire last. The last is now ready for polishing, and after that, for a heavy coat of shellac. It is polished and waxed on a leather wheel. Then it goes into the shipping room ready for shipment to the manufacturer.

**Costume Designs.** The designs for the complete costume are made as follows: Each designing house of Paris that has world standing brings out from 300 to 1000 original dress designs a year. Each designing house has one head designer, who is usually the executive head of the house. From 20 per cent to 30 per cent of the models are discarded after the manikins have displayed them, so that only the best of the designs are retained.

The models that are retained are placed before the public. Customers call and select one of the models, and decide to have a copy made with certain changes to meet personal taste. The copy is ready for a try-on in a week's time, then finishing touches are made and it is ready for the customer.

The houses have between 5000 and 10,000 customers each year, and each costume must be adapted to the special requirements of the customers, such as measurements, personal tastes, abnormal proportions, texture of skin and color of hair, so that every costume represents a separate manufacturing process. No standardization is allowed in these houses, as each customer desires to have a costume that reflects her individuality.

An original costume is frequently developed after a great expenditure of time and money — sometimes costing as much as \$1000. It is then copied and produced in the same materials at one-tenth the cost, or \$100. Such costumes are displayed on models in fashion shows and public places. They soon appear at leading social functions — formal balls, the President's reception, on Palm Sunday and on Easter, at Palm Beach, etc. The descriptions of these costumes are given in great detail in newspaper accounts and fashion notes. Soon similar models are placed on the market composed of cheaper materials.

The history of any style shows that it passes through a number of stages during its popularity: (1) the original style or model,

composed of the best material — pure silk, etc.; (2) a substitute made of cheaper material, but in the same model — a copy in cotton and silk; and (3) cheaper copies of similar design but of the cheapest materials and workmanship. People then tire of the style and it passes.

Piracy consists of taking a fine design and reproducing it in an inferior or cheaper material, as explained in the above paragraph.

The economic life of wearing apparel or other commodity is the period through which it retains its utility and therefore its appeal. Hence wearing apparel has a limited economic life of several months during the season. At the close of the season, it is out of fashion. This is particularly true of hats, whose style utility may even be less than a season.

### QUESTIONS

1. (a) What is a patent? (b) Why does the government encourage patents? (c) What have patents to do with the subject of economics of clothing?

2. (a) Give a brief history of the granting of a patent. (b) Why is a patent a monopoly? (c) Should the government encourage monopolies?

3. (a) Describe the organization of the Patent Office. (b) State the steps in securing a patent.

4. Describe the patent system.

5. (a) How long does it take to grant a patent? (b) What is accomplished during this time?

6. What are some of the defects of the patent system in the United States?

7. If an inventor seeks a patent in this country, how can the government be sure the patent was not granted previously in Russia?

8. What is meant by the expression "interference" between two inventors? Explain in detail with illustrations.

9. Describe briefly the history of the invention of power textile machinery.

10. Does Arkwright represent the average inventor or promoter of inventions?

11. Why was it necessary to invent a power spinning frame after the invention of the fly shuttle?

12. Why did the invention of the spinning frame cause the invention of the power-loom?

**13.** Describe briefly the difficulties encountered by Jacquard in placing his loom attachment on the market.

**14.** Explain briefly the history of the invention of the first knitting power machine.

**15.** Why were not the inventions of power textile machinery applied immediately to wool and silk as well as cotton?

**16.** Explain the invention of the sewing machine and the difficulties experienced in placing it on the market.

**17.** Explain the economic importance of the invention of the sewing machine.

**18.** Compare stitching by hand and by machinery.

**19.** Give a brief outline of the history of Elias Howe in inventing the sewing machine and his difficulties in holding to his patent rights.

**20.** (a) What is a trade-mark? (b) State the value of a trade-mark. (c) Give a brief history of trade-marks in industry standards.

**21.** Is it possible for one to use a trade-mark in silk and apply it to jewelry?

**22.** (a) What is meant by a copyright? (b) How does it differ from a patent?

## CHAPTER XII

### ACCOUNTING AND COST FINDING

**Importance.** Every manufacturer and trader of wearing apparel should be able at all times to know the exact status of his business, the cost of production of his goods, the cost of selling, and the conditions of profit or loss. According to experts most failures in the textile and clothing business are due to lack of knowledge about fundamental costs of production, selling, etc. Such information is important, not only to the business man but also to the consumer. If the latter is informed about the various factors that enter into the price of textile products, he is better able to appreciate real values.

In the production of wearing apparel from the raw material until it is a finished product in the hands of the consumer, there is more or less expense attached to every operation or handling. Since the purpose of production is to prepare the wearing apparel for sale at a profit, it is necessary to keep an accurate account of the cost of each operation and transaction from the raising of the raw material to the packing of the finished articles and until it is placed in the hands of the consumer.

In order to have a fair profit and meet the competition of others it is necessary not only to keep an accurate account, but also to see that the cost of everything from raw material to finished product is reduced to a minimum.

**Definition.** The system of recording the transactions involved in the manufacture and sale of wearing apparel, etc., is called the accountancy or bookkeeping of wearing apparel. One division of accountancy very useful in the industry is that of cost accountancy. It is a system of records that enables the manufacturer to determine with accuracy not only the production cost of wearing apparel, etc., but also the cost of the different elements that enter

into the total cost, such as material (cotton), labor (weavers, etc.), power, and each other manufacturing expense.

Formerly cost finding was largely a form of guess work. But with the keen competition of the last generation, manufacturers have been obliged to reduce the cost of production rather than to raise the price of the product, in order to meet competition. This is particularly true in the case of all forms of wearing apparel, where the margin of profit is small.

**Principles.** There are certain fundamental principles used in accountancy that must be strictly followed in recording transactions. In order to secure uniformity in recording these transactions, certain typical books or forms are used. Uniform methods of cost finding have been developed by trade organizations and associations.

**Bookkeeping.** Bookkeeping is a system of recording business transactions for the purpose of showing increases and decreases in assets and liabilities, including capital. An account is debited when it receives values and credited when it delivers values.

**Invoice.** When a merchant sells an order of goods (merchandise) to a customer, he sends with it a bill, called an *invoice*, unless the customer has paid cash at the time of the sale. An invoice contains an itemized list of the merchandise sold, as well as the following information :

(a) The place and date of the sale.

(b) The terms of the sale (usually printed in small type); *i.e.*, cash or a specified number of days' credit. Sometimes a small discount is given if the bill is paid within a short, specified period.

(c) The quality, name, and price of each item, placed on the same line; and the entire amount of each item, called the *extension*, is placed in a column at the right.

(d) Discounts are deducted from the bill if they have been promised.

(e) Extra charges, such as cartage and freight, are added after taking off the discount.

When the amount of the bill or invoice is paid to the merchant, he marks the invoice as follows :

*Received Payment, Date*

*Name of Firm*

*Per name of authorized person.*

This is called receipting a bill.

The following examples of invoices will illustrate the points mentioned :

*Goods are Charged for the Convenience of Customers and Accounts are Rendered Monthly*

R. A. McWHIRR Co.

# DEPARTMENT STORE

FALL RIVER, MASS.

**A. A. MILLS, Pres't & Treas.**

J. H. MAHONEY, Supt.

R. S. THOMPSON Sec'y.

### Purchases for

September, 1932

J. S. Young

215 High St., City

No.

Order Number 719

DATE	ARTICLES	AMOUNTS	DAILY TOTAL	CREDITS
Sept 4	2 Doz C Hangers	90	180	
	2 " Skirt "	45	90	
5	120 Long Cloth	15	1800	
	34 $\frac{3}{8}$ Cambric	5 $\frac{1}{2}$	189	
6	522 B Cambric	18	9396	
	100 B Nainsook	16	1600	
	24 Doz Kerr L Twist	120	3480	
	8 Doz Tape Measures	25	200	
	84 " W Thread	51	4284	
	1 10/12 Doz Tape	25	46	
9	1 Gro Tambo Cotton	520	520	
	$\frac{1}{2}$ Doz Bone Stillettos	46	23	
	$\frac{1}{2}$ " Steel "	46	23	
	40 Paper Needles	3 $\frac{1}{2}$	140	
	20 " "	3 $\frac{1}{2}$	70	
	2 Doz M Plyers	600	1200	
	2 Boxes Edge Wire	125	5400	
	12 " Even Tie Wire	180	2160	
	24 " Brace "	225		
	2 " Lace "	160	320	
	2 Pk Ribbon	125	250	
	2 Rolls Buckram	90	180	
	48 Yd Cape Net	15	720	
13	100 Crinoline	5	500	
	125 "	5	625	

John C. Wilwood Corporation  
Manufacturer & Commission Merchant  
Ribbons & Silks  
Two Park Avenue  
New York

TELEPHONE  
ASHLAND 4-4560

Sold to

TEXTILE HIGH  
351 WEST 18TH ST  
NEW YORK CITY

CABLE ADDRESS  
" CODICIL " SL

VIA MESS

DATE	ACCOUNT	TERMS	INVOICE NO.	AMOUNT
FEB 4 1932	P	NET C O D	04839	11 02 NET

*This Account has been Assigned to, is Owned by, and is Payable in New York Funds, to  
COMMERCIAL FACTORS CORPORATION, FACTOR, 2 PARK AVE., NEW YORK  
If this Bill is not found to be correct in all respects Commercial Factors Corporation  
must be notified at once.*

PATT	YDS	NO	PCS	PRICE		
2048	50	3	3	95	2 85	
				LESS 7%	20	
						2 65
2048	50	3	1	95	95	
				LESS 7%	07	
						88
2048	50	2	1	75	75	
				LESS 7%	05	
						70
PEARL	50	5	1	1 50	1 50	
" "	50	7	2	1 95	3 90	
					5 40	
				LESS 7%	38	5 02

No Claims Allowed after Ten Days or after Pieces Are Cut  
Goods Delivered to Common Carriers or Sent via Parcel Post Are at the Risk of the Purchaser

Open Account. A course of business dealing still continued between two parties is called an open account, or an account of which up to date there has been no settlement made. Such an account is also termed an account current, and formerly abbreviated *a/c*, a sign now almost exclusively used for account. A stated account is an account or statement showing the result of a course of transactions for adjustment or settlement between two parties.

Most firms carry accounts by which customers are allowed to make purchases which are charged against them in a book of record. Payment is made once a month, the bill being rendered on the last day of the month or the first day of the following month.

**Ledger.** Whenever an invoice is sent to a customer, a record of the transaction is made in a book called a *ledger*.

The pages of a ledger are divided into two parts by means of red or double lines. The left side is called the debit and the right the credit side. At the top of each ledger page the name of a person or firm that purchases merchandise is recorded. The record on this page is called the *account* of the person or firm. When the customer purchases merchandise, the amount is recorded on the debit side of his account. When merchandise or cash is received from the customer, it is recorded on the credit side. The date, the amount, and the word *Mdse.* or cash is usually written.

We *debit* an account when it receives value, and *credit* an account when it delivers value.

E. D. REDINGTON

1934						1934					
Jan.						Jan. 2	Cash	a	109	810	58
12/2	Balance	a		810	58	2	Note-60 day		114	1500	
2	Mdse.		100	3057	50	9	Return	b	115	575	
10	Mdse.	b	100	575		25	Cash		109	500	
22	Mdse.		115	375		27	Return		115	157	50
						31	Browne's Acct. (transferred)		115	397	53

SPECIMEN LEDGER PAGE

A summary of the debits and credits of an account is called a *statement*. The difference between the debits and credits represents the standing of the account. If the debits are greater than the credits, the customer named on the account owes the merchant. If the credits are greater than the debits, then the merchant owes the customer.

The system of debits and credits demands that every complete entry consist of at least two accounts of equal amounts. To

illustrate: If you sell 100 suits of clothes for cash, the complete entry of this transaction demands a debit to the cash account equal to the sums received, and a credit of 100 suits to the merchandise account.

The accuracy or correctness of accounts may be checked by summarizing the balance of all the accounts in a statement, called a *trial balance*. The balances of each side of the trial balance must be equal.

**Balance Sheet.** A balance sheet is usually made quarterly, semi-annually, or annually. It lists assets, including inventory items and liabilities. The difference between assets and liabilities indicates the present worth of the business.

## ASSETS

Cash.....	\$40,779
Accounts receivable.....	213,931
Merchandise inventory.....	312,909
Building and land.....	213,909
Boilers, elevators, etc.....	70,066
Machinery.....	1,826,183
Patents.....	2,657
Investments.....	23,349
Auto.....	578
Truck.....	1,070
Prepaid interest.....	520
Prepaid insurance.....	737
Prepaid taxes.....	2,000
	<u>\$2,708,894</u>

## LIABILITIES

Capital stock.....	1,125,000
Surplus.....	170,997
Reserve for depreciation.....	747,542
Bank loan.....	225,000
Mortgage.....	250,000
Accounts payable.....	85,485
Commissions due H. & W.....	5,983
Accrued payroll.....	24,000
Reserve for doubtful accts.....	59,852
Profit for 3 months.....	15,032
	<u>\$2,708,894</u>

## INVENTORY

Hosiery rough.....	\$136,380
Hosiery finished less 10%.....	93,188
Hosiery in process.....	19,792
Raw material.....	63,549
Total.....	<u>\$312,909</u>

The assets are arranged in order in one column and in the opposite column are the liabilities and proprietor's interest. The total of the assets must equal the total of the liabilities and capital, because assets minus liabilities gives us capital, and capital is the proprietor's investment. Present capital compared with previous capital shows the amount of profit or loss for the period of operation.

On page 509 one may find a quarterly statement of a knitting mill for March, 1932.

Notice the different items under assets: cash to meet emergencies and for office requirements, pay rolls, current operating expenses, etc.; accounts receivable are the amounts due the firm for delivery of goods. The merchandise inventory represents goods in process and finished goods. The items on buildings, equipment, patent rights, etc., represent the plant and machinery. Prepaid interest on borrowed capital, unexpired insurance on buildings and taxes are all included under assets. Note that the item of surplus under liabilities represents funds for emergencies, such as purchase of stock and dividends not earned. The item mortgage is an issue of bonds.

Capital stock and surplus technically are not liabilities. They are the owner's interests or equities. Many textile mills like Gotham Mill present their assets and liabilities as shown in the above statement.

**Inventory.** The inventory represents in detail the amount of physical stock on hand. It includes the value of the stock — raw materials, goods in process, and finished products. The price usually assigned to the stock in the inventory is the price paid for it. But in times of depression, when prices have fallen, banks demand the market price of the stock the day of the inventory. In a falling market a firm shows a loss due to the changes in price from purchase cost to the market price on the day of the inventory.

All the profits of a business are not declared as dividends. A part is retained for unforeseen expenses, and this amount is called a reserve fund. Sometimes when the business has not earned a dividend during the quarter, the dividend is declared and taken from the reserve fund or surplus.

**Profit and Loss.** A merchant must sell merchandise at a higher price than he paid for it in order to have sufficient funds at the end of the transaction to pay for his operating expense, clerk hire, rent, etc. Any amount above the purchase price and its attendant expenses is called *profit*; any amount below purchasing price is called *loss*.

A merchant must be careful in figuring his profit. He must have a set of books so arranged as to show what caused either an increase or reduction in the profits.

There are certain special terms used in considering profit and loss. The first cost of goods is called the *net* or *prime* cost. After the goods have been received and unpacked, and the freight, cartage, storage, commission, etc., paid, the cost of the merchandise has been increased to what is called the *gross* or *full* cost. The total amount received from the sale of goods is called the *gross selling price*. The sum of expenses above the cost connected with the sale of goods subtracted from the gross selling price is called the *net selling price*. A merchant gains or loses according as the net selling price is above or below the gross cost.

There are two methods of computing gain or loss, each based on the rules of percentage. In the first method, the gross cost is the *base*, the per cent of gain or loss the *rate*, the gain or loss the *percentage*. The second method considers the selling price the base.

First Method: Based on Cost Price.

$$\text{Profit} = \text{Selling Price} - \text{Cost Price.}$$

$$\text{Loss} = \text{Cost Price} - \text{Selling Price.}$$

$$\text{Per Cent of Profit} = \frac{\text{Profit}}{\text{Cost Price}}.$$

$$\text{Per Cent of Loss} = \frac{\text{Loss}}{\text{Cost Price}}.$$

This method of computing profit is now almost obsolete. A modern merchant would not use it. Unless a problem states that the calculation is to be based on the cost, the second method, based on the selling price (given below) is to be used.

*Example 1.* A small knitting mill was bought for \$14,990 and sold at a profit of \$550. What was the per cent of gain over cost?

$$\text{SOLUTION: } \frac{550}{14990} \times 100 = \frac{5500}{1499} = 3.7\%. \text{ Ans.}$$

*Example 2.* A merchant buys a suit for \$25 and wishes to sell it at a gross profit of 40% on the cost. What is the selling price?  
*Ans.* \$35.

*Process.* Since the mark-up (gross profit) is based on the cost, we find 40% of \$25 ( $\$25 \times 40\%$ ) which is \$10, the gain. Adding the gain (\$10) to the cost we get \$35, the selling price.

*Example 3.* A dealer sold a loom at a profit of \$115, thereby gaining 18% on cost. What was the selling price?

**SOLUTION:** If \$115 = 18% of cost, which is 100%,

$$1\% = \frac{115}{18} = 6.3889,$$

$$100\% = \$638.89 \text{ cost}$$

$$\text{Adding } 115.00 \text{ profit}$$

$$\underline{\$753.89 \text{ selling price}}$$

**Second Method:** Based on Selling Price.

$$\text{Per Cent of Profit} = \frac{\text{Profit}}{\text{Selling Price}}.$$

$$\text{Per Cent of Loss} = \frac{\text{Loss}}{\text{Selling Price}}.$$

Many merchants find that it is better business practice to figure profit on the selling price rather than on the cost price. Many failures in business can be traced to the practice of basing profits on cost. We must bear in mind that no comparison can be made between per cents of profit on cost until they have been reduced to terms of the same unit value or to per cents of the same base.

To illustrate: It costs \$100 to manufacture a certain article. The expenses of selling are 22%. For what must it sell to make a net profit of 10%? Most students would calculate \$132, taking the first cost as the basis of estimating cost of sales and net profit. The average business man would say that the expenses of selling and cost should be computed on the basis of the selling price.

**SOLUTION:** Expenses of selling = 22%

$$\text{Profit} = 10\%$$

$$= 32\% \text{ on selling price}$$

$$\therefore \text{cost on } \$100 = 68\% \text{ selling price.}$$

$$100\% = \$147.06 \text{ selling price.}$$

*Example 4.* An article costs \$3.75. What must it sell for to show a profit of 25%? *Ans.* \$5.

*Process.* Deduct 25% from 100%. This will give you a remainder of 75%, the percentage of the cost. If \$3.75 is 75%, 1% would be \$3.75 divided by 75, or 5 cents, and 100% would be \$5. Now, if you marked your goods, as too many do, by adding 25% to the cost, you would obtain a selling price of about \$4.69, or 31 cents less than by the former method.

The percentage of cost of doing business and the profit are figured on the selling price.

TABLE FOR FINDING THE SELLING PRICE OF ANY ARTICLE

COST TO DO BUSINESS	NET PER CENT PROFIT DESIRED																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	20	25	30	35	40	50
15%	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	65	60	55	50	45	35
16%	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69	64	59	54	49	44	34
17%	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	63	58	53	48	43	33
18%	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	62	57	52	47	42	32
19%	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	61	56	51	46	41	31
20%	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	60	55	50	45	40	30
21%	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	59	54	49	44	39	29
22%	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	58	53	48	43	38	28
23%	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	57	52	47	42	37	27
24%	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	56	51	46	41	36	26
25%	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	55	50	45	40	35	25

*Rule.* Divide the cost (invoice price with freight added) by the figure in the column of “net rate per cent profit desired” on the line with per cent it cost you to do business.

*Example.* If a machine costs..... \$60.00  
Freight..... 1.20  
\$61.20

You desire to make a net profit of..... 5 per cent  
It costs you to do business..... 19 per cent

Take the figure in column 5 on line 19%, which is 76.

76| \$61.2000 |\$80.52 the selling price.  
60 8  
400  
380  
200  
162

**Profit.** There is a fascination in business, particularly if it is your own business. This fascination or charm prompts most people to exercise their ability to the greatest extent. If this statement

is true, why are there so many failures, particularly in the clothing and wearing apparel business? Most people think any one can be a business man. Experience shows that a business man must be trained technically and by experience in the principles and routine of good business management, and must have in addition the personal qualities of a leader, a good trader, plus sufficient capital to start a business.

The profits of a business are in proportion to the business ability of the manager; and the salary paid to the manager of a large shoe factory or mill is in proportion to his ability to make profits or dividends. But while the business may be interested in large profits, it is not desirable to achieve this point by raising prices and lowering wages, but by improving methods of production, better management, increased sales, etc., so as to lower the price of wearing apparel or other products. Wages are, and should be, highest in the country where the profits are greatest.

The success of a mill or of a business man engaged in manufacturing clothing, etc., is measured by the profit — that is, in a popular sense, all the earnings above the expenses, and usually calculated on a yearly basis or a fraction of a year. In a strict economic or technical sense, pure profit is the net return, that is, the receipts or gross earnings minus the (*a*) wages, (*b*) interest, and (*c*) rent, and also minus the (*d*) interest on the proprietor's capital, (*e*) the manager's or proprietor's salary, (*f*) rental value of the property, (*g*) depreciation of the property and equipment, and (*h*) the reserve fund, that is, a sufficient amount to cover possible losses due to bad bills, cost of collections, losses, etc.

Under our competitive system there is no normal rate of profit. Some businesses may earn as much in a year as 90 per cent of the capital invested, while others may lose 10 per cent of the capital invested.

A reasonable or minimum rate of profit would be the salary that the business man or manager would obtain if he were working for some one else. But, strictly speaking, such a return is not pure profit, since an entrepreneur who manages his own business is entitled to such a salary. Likewise, if an entrepreneur uses his own land and capital, he is entitled to a fair rent and interest as part of the cost of production.

*Pure profit* is the return above such items. It does not enter into the cost of production, but is a reward for superior organizing ability, assumption of risk, etc.

**Expenses.** If we examine the routine business of a mill or clothing store, we find that the expenses of the business consist of: (a) rent; (b) initial cost of fixtures and machinery, distributed over a period of years, and upkeep of the same; (c) raw material or raw cloth, trimmings, etc., that go into the manufactured article; (d) transportation of unfinished and finished goods; (e) wages of the employees — workers, clerks, etc.; (f) interest on borrowed money, etc. These items are called the expenses of the business. The total expenses, subtracted from the gross earnings, give us a sum called gross profit. In order to arrive at the net profit, the following items must be deducted from the gross profits: (a) capital charges, (b) manager's salary, (c) depreciation of stock and equipment, and (d) a reserve to cover cost of bad collections, losses, etc.

**Production Costs.** The difference between gross income and production costs is profit. Frequently the items that enter into the production costs and the cost of selling may be reduced. If this is done, then the profits are greater. Any reduction in cost of materials, labor, overhead, or in selling cost means increased profit.

In other words, it is possible to increase profits either by (a) an increase in prices, with costs of production and selling remaining the same; or (b) by prices remaining constant, with a decrease in costs of production or selling, or both.

Sharp competition in the wearing-apparel industry means low prices, which in turn mean small margins between selling and cost prices. The only factors that are left for reduction are those included in production costs.

The manufacturer must control the cost of production so as to have a difference, or profit, between the cost of manufacturing wearing apparel and the price obtained for it in the market. It is absolutely necessary for a business man to know every day whether he is operating on a profitable basis. This can be done only by a proper cost-finding system.

No business today suffers for want of a proper cost-finding system more than the wearing-apparel industry. It is conducted more

or less on chance, and most producers know the condition of their business only when an inventory is taken.

The record of all business transactions must be kept in all business establishments. This record should include : (a) all materials, finished, or semi-finished products received or (b) delivered ; (c) a record of sales, (d) of purchases, (e) prices charged, (f) prices paid, (g) cash received or cash paid, (h) credit received or credit given.

This involves the use of a set of daily record cards on which are recorded such items as : (a) raw materials, (b) direct labor employed during the different steps of production, and (c) the general expense, or overhead, connected with the different processes of production. It is essential that the cards should not be too complicated, should be arranged in simple sequence, of a size suitable for filing, and properly indexed, with all expenditures charged to the proper account — that is, the expenditures properly entered.

**Cost-Finding Practices.** In the last few years rapid progress has been made in cost-finding practices, or the finding of the cost of production of an article or commodity. Costs in industry may be divided between : (1) commercial, or distribution and selling costs, and (2) manufacturing costs.

The efficient cost accountant is a specially trained financial accountant. He should be a master of applied finance in business management ; his interest is with the technical and commercial management, as distinct from a financial accountant, whose interest is with credits, banks, balance sheets, etc.

In the modern cost department, accountancy and management meet. It is not too much to say that in the industrial world we are watching the evolution of a new science, the rise of a new profession. Costs and cost accounting are really a branch of management. The cost department reflects in the minutest detail all the operations of a business. It has two faces — one toward internal works, management (the promotion of economic production), the other toward external policy (the foundation for an economic price).

Generally speaking, a company sells not individual processes, but finished products, and therefore wants to know the cost of production, not only as a check on and guide to selling prices, but as a pointer to the most profitable method of doing business.

This sounds simple; in practice it will be found to be beset on every hand with difficulties. Let us look at some of the main elements of cost in more detail; *i.e.*, the three main elements — labor, material, and manufacturing expenses.

**Labor and Material.** If we study carefully the transactions involved in raising or manufacturing the raw material used in wearing apparel, such as raising cotton, wool, silk, rayon, and manufacturing them, we find that there are always two definite expenses to be charged — materials and labor. Thus in raising a raw product we need: seed, fertilizer, etc., for raising cotton and linen, food for raising sheep and silkworms, called *materials*, in addition to the care of the ground, sheep, etc., called *labor*. The same is true in manufacturing cloth. There are the raw materials, raw cotton, wool, etc., and the labor for assisting in transforming the raw materials into finished cloth.

These two charges — for materials and labor — can be directly apportioned among the units of product because they have contributed directly to the amount of production.

But the fixed charges, such as rent for the land for raising cotton, the building used for the manufacturing, tools for cultivating and harvesting crops, machinery and power for converting raw materials, are constant whether production is going on or not. Hence they can not be charged directly to each pound of cotton, each yard of cloth, etc. They are called *overhead charges*.

**Overhead Charges.** A study of industry shows that it is necessary to have different kinds of laborers. Some work directly on the product, operating the machines, etc.; these are employed in what is called productive labor, because they are employed directly in the production of the wearing apparel or other commodity. The superintendent, overseers, second hands, and other supervisory workers are included under production. There are others, such as engineers, firemen, repair men, janitors, watchmen, etc., that are employed in what is called indirect labor.

The expense or outlay for productive labor is charged to labor expense, while all indirect labor is charged to overhead expense.

The same classification applies to materials. There may be direct and indirect material cost. Direct material cost includes those materials used directly in the making of the wearing apparel.

Materials used in sweeping the floor, coal, lubricating oil, small tools, etc., are called indirect materials cost. Direct material cost is charged to materials expense, while indirect material cost is charged to overhead expense.

Thus we see that all charges not placed against direct labor or direct material are placed against overhead expense. This item of overhead expense is a very large one and an important one in business. It is known by other names, such as (a) running expense, (b) indirect cost. Overhead expense should be carefully analyzed and itemized in small divisions, such as (a) rent, (b) light, (c) heat, (d) power, (e) repair, (f) depreciation, (g) insurance, (h) taxes, (i) supplies, (j) interest, (k) selling expense, etc. By such an analysis it is possible to study each one and see if possibly it may be reduced.

**Methods.** The introduction of machinery and steam motive power revolutionized practically every industry. It also revolutionized and complicated the elements of cost. In the old hand-working days, raw material and labor covered practically all costs, and even after the introduction of machinery, many old-fashioned firms never got much farther in their cost finding. The elements of machinery and mechanical motive power have been too complicated for them, and they have generally dealt with it in an exceedingly haphazard manner.

The old-fashioned way was simply to lump the whole of the fixed charges together, take an average at so much per unit, and apply it to the price, regardless of the processes through which the work passed or the time it took on the way. In some industries a percentage of manufacturing costs — wages and materials — was taken; in some, a percentage of wages only.

None of these methods is as accurate, however, as that based on a complete departmentalization of the works. This means the division of the works into a group of independent shops or departments, such as carding, spinning, etc., and the appropriate distribution of standing charges, based on capital values, etc. From this there can be compiled a machine cost per hour for every process.

**To Estimate Cost of Manufacturing.** There are many methods used for estimating costs, but the following, as represented on the



Materials

Description	Number	Length	Width	Thick- ness	Weight	Unit Cost	Total Cost	Cost Per Piece
Totals								

Overhead Charges

Grand Totals	

AVERAGE PERCENTAGE OF COST IN THE MEN’S WEAR INDUSTRY

Average Cost of	Percentage of total
Raw materials.....	49.19
Direct labor.....	27.50
Indirect labor.....	3.73
Factory expenses.....	2.26
Administration.....	3.28
Selling.....	7.93

COST OF PRODUCTION

The proportion of cost of labor and cost of materials in the men’s ready-to-wear outer garment industries in the United States.

	Cost of labor	Cost of materials and overhead
I. Men’s three-piece sack suit :		
Average quality cheviot.....	25%	75%
Fine clay worsted.....	21%	79%
Low-grade tweed.....	30%	70%
Cheap or medium serge.....	28%	72%
II. Men’s overcoats :		
Kersey, average quality.....	25%	75%
Fine kersey.....	22%	78%
Cheap beaver.....	31%	69%
Chinchilla (average).....	23%	77%
Melton (average).....	22%	78%

The average percentage cost of the elements in wearing apparel production are : materials, 50 to 55 per cent ; labor, 30 to 35 per cent ; and overhead, 15 to 20 per cent.

This total cost of a manufactured article of wearing apparel, such as a pair of shoes, may be determined as the sum of the following costs :

- (a) Direct labor cost, as per the schedule on page 519.
- (b) Direct material cost, as per the schedule on page 520.
- (c) Overhead expenses determined by multiplying the number of hours of machine labor by the sum of special and supplementary hour rates.
- (d) Administrative expenses, as determined on page 522.
- (e) Selling expenses, as determined on page 523.

The cost of manufacturing a single pair of shoes — called the manufacturing, or factory, or production cost — is the cost of (a) materials, (b) labor, (c) factory expense, and (d) factory overhead of each pair. The selling or trading cost of each pair is the factory or manufacturing cost plus the additional selling expense of a single pair. The total cost of a single pair includes the selling or trading cost plus the cost of administration and other expenses.

To illustrate : A pair of shoes is sold to the consumer by a retail store for \$9.50. The costs may be distributed as follows :

		Per cent of factory selling price
Factory labor . . . . .	\$1.37	21.92
Cost of materials . . . . .	2.86	45.76
Proportional part of		
Insurance and taxes on the factory . . . . .	.76	12.16
Proportional part of cost of		
Advertising and selling by the factory . . . . .	.85	13.60
Proportional part of		
Profit to factory . . . . .	.41	6.56
Shoe price at factory . . . . .	\$6.25	100.00
		Selling price of retailer
Price of shoe to retailer . . . . .	6.25	65.79
Proportional part of retailer's rent . . . . .	.53	5.58
Proportional part of cost of		
Advertising by retailer . . . . .	.36	3.79
Proportional part of retail labor		
Sales force, bookkeepers . . . . .	1.18	12.42

		Selling price of retailer
Proportional part of cost of		
Management.....	.27	2.84
Proportional part of cost of		
Light, heat, and freight.....	.19	2.00
Proportional part of cost of		
Bad debts, repairs, telephone, taxes..	.34	3.58
Proportional part for		
Profit to retailer.....	.38	4.00
Retail selling price.....	\$9.50	100.00

**Depreciation.** The loss in value in the manufacturing plant or mill is called *depreciation* and is the result of use. It must be considered part of the production cost. The amount of depreciation is determined by the life of the building, machines, or other equipment, minus the junk or residual value. To illustrate: If the life of a machine is ten years, we must deduct ten per cent of the cost of the machine minus the proportional part of the junk value for depreciation each year.

**Apportioning Overhead Costs.** One of the most difficult problems in cost accountancy is the assignment of the proper overhead expense charge to each article manufactured. There are many different expenses connected with the overhead, and they differ more or less in different industries. No standard method will apply to all industries and trades.

Various devices that are at best approximations have been attempted in determining the cost of overhead for various parts of production; such as:

(a) A percentage of the wages, represented by a fraction whose denominator is wages and whose numerator is factory costs.

(b) An hourly rate of overhead is determined by dividing the total overhead by the total number of hours of work of direct labor.

(c) A fraction of the overhead (charged to a department) whose numerator is sales of the department and whose denominator is the total sales of the factory or store.

(d) The cost of overhead for each machine is determined by the floor-space occupied by the machine, plus allowances for handling the material. The ratio of floor-space to total floor-space multiplied by total overhead will give department or machine overhead.

In this case the factory may be considered as being divided into a number of departments. Each department may be considered as being composed of one machine.

The method (*c*) is the most reliable for dry goods and wholesale stores, and (*d*) is the most effective in factory or mill organization.

In these two methods the overhead expenses are considered as of three classes: (1) administrative expense, (2) selling expense, (3) the overhead factory expense. To illustrate: If we study the organization of a shoe factory, we shall find that it may be divided roughly into three sections: (*a*) administration, (*b*) factory proper, (*c*) selling department.

The administration section includes the officials and clerical help to attend to correspondence, pay rolls, etc. The factory proper includes the operation and handling of materials, power, and machinery used in the manufacture of shoes. The selling section includes the advertising, styling, salesmen, etc.

The factory cost of a pair of shoes must include the proper additional expense of each department.

The cost of administration is determined in relation to the factory cost. If a shoe factory has a factory cost of \$25,000 and an administration cost of \$1250 a month, then the cost of administration is five per cent of the factory cost. Adding five per cent to the factory cost of a pair of shoes would include the cost of administration.

The cost of selling should be added to the factory and administration costs. This cost of selling may be determined by the percentage of cost of selling to the value of total sales. For example: If \$15,000 is the cost of selling and the value of shoes sold is \$300,000, then the cost of selling is about five per cent of the goods sold. This five per cent is added to the factory administration cost to cover the selling expense.

**Direct Distribution of Overhead.** Certain items of factory costs may be distributed directly to the different units as follows:

(*a*) The rent of a machine is that part of the total rent expressed by a fraction whose numerator is the floor-space of the machine and the denominator is the total floor-space of the factory. If a machine occupies a space of 200 square feet and the total factory

space is 40,000 square feet and the total rent \$800 per month, the rent of the machine is  $\$800 \times \frac{200}{40,000}$  or \$4 per month.

(b) Heat, light, and power costs may be determined in a similar manner.

(c) Interest, taxes, and insurance must be calculated in terms of a fraction whose numerator is the value of the machine and whose denominator is the total value of the plant multiplied by the total interest, taxes, and insurance costs.

(d) Power cost is determined by a fraction whose numerator is the horsepower of the machine and whose denominator is the total horsepower of the plant multiplied by the total expense of the power.

(e) Depreciation costs consist of the depreciation of the machine itself, and the depreciation of the part of the factory where the machine is located. The machine depreciation is frequently considered as 10 per cent of its cost.

After the correct cost for every step of production has been obtained, it is necessary to study the figures to see if any item of cost is excessive. If so, the excessive cost should be cut without interfering with production or quality of product.

**Regulating Costs.** We saw in Chapter VI that the manufacturer of a competing product does not determine the price. In case of a monopoly the manufacturer can set the price, but otherwise it is determined by the above factors in open competition. The market price is ordinarily fixed by the costs of the least efficient producer. Thus the lower the costs of a manufacturer, the greater his profit.

Many textile and clothing manufacturers feel that knowledge of the actual cost of each step in manufacturing is not necessary or important in determining sales policies, because after all the mill or manufacturer must sell at prices fixed by competition. This attitude explains in many cases the failures of manufacturers, because they are producing many articles at a loss and a few at a profit. Cost finding would show in detail the exact items that involve a loss and those that are operating at a profit.

There are many ways in which a plant can regulate costs. For example, there are many grades of raw material, varying greatly in price. Some of the wool on a sheep's back may be worth \$1 per

pound, while wool from under the body and on the legs may be worth only 10 cents a pound. Therefore, the price of the finished commodity or wearing apparel may be regulated by the kind of raw material used. Sometimes the cost of raw material may be regulated by mixing or blending different grades of wool, cotton, etc.

It is customary in mills to mix different fibers at different prices in order to make a product of some intermediate quality or price. The process of finding the value of the product is called *alligation*.

*Rule.* — To find the average cost per pound of a mixture, when the proportion of the materials mixed and their prices are given, divide the total value of the materials mixed by the sum of the amounts put in, and the quotient will be the average price per pound.

A mill man desires to find the average value per pound for the following lot of wool:

218 lb. at 81 cts. per lb.	$218 \times .81 = \$ 176.58$
413 lb. at 79 cts. per lb.	$413 \times .79 = 362.27$
284 lb. at 82 cts. per lb.	$284 \times .82 = 232.88$
264 lb. at 83 cts. per lb.	$264 \times .83 = 219.12$
18 lb. at 103 cts. per lb.	$18 \times 1.03 = 19.44$
	<hr/>
1197 lb.	$= \$1074.29$

$1074.29 \div 1197 \text{ lb.} = \$0.897$ , price of mixture per pound.

The process of finding the quantities of different values required to produce a mixture of a given value is called *alligation alternate*.

A mill man often desires to find the amount of each kind of wool that must be mixed to produce a mixture of a definite amount.

*Example.* — How much wool of each kind at respective values of 81, 85, and 96 cts. must be mixed to produce a mixture of 89 cts. per pound?

$$\begin{array}{rcl}
 89 \left\{ \begin{array}{l} 81 \\ 85 \\ 96 \end{array} \right\} & \begin{array}{l} + 8 \times 1 = 8 \\ + 4 \times 1 = 4 \\ - 7 \times 1\frac{5}{7} = 12 \text{ loss} \end{array} & \\
 & & 12 \text{ gain}
 \end{array}$$

Place the price of the mixture on the left and the prices of the ingredients on the right of the brace. The differences are placed on the right of another brace as plus or minus as shown above. The  $1\frac{5}{7}$  is obtained by showing that the total loss must equal the total gain. Therefore divide the 7-cent loss into the total (12-cent) gain to get the quantity loss ( $1\frac{5}{7}$ ).

One pound of the first and one of the second will give a gain of 12 over the desired mixture;  $1\frac{5}{7}$  lb. of the third will make up the difference of 12.

One pound of the first, one of the second, and  $1\frac{5}{7}$  pounds of the third will give the desired mixture.

*Example.* — A manufacturer has on hand 432 lb. of wool of a value of 94 cts. which he desires to use in producing a lot worth 82 cts. per lb. He has a large lot of a cheaper grade of wool (2587 lb. worth 75 cts.). How much of this cheaper grade must be used to produce a mixture worth 82 cts. per pound?

$$82 \left\{ \begin{array}{l} 94 \\ 75 \end{array} \right\} - 12 \times 432 = 5184 \text{ loss}$$

$$+ 7 \times 740\frac{4}{7} = 5184 \text{ gain}$$

Similarly the 7-cent gain is divided into the total loss (5184) to obtain the quantity required ( $740\frac{4}{7}$  lb.).

He should mix 432 lb. of 94 cts. and  $740\frac{4}{7}$  lb. of 75 cts. wool in order to produce a mixture of 82 cts.

$$\begin{array}{rcl} \text{Proof. — } 94 \times 432 \text{ lb.} & = & \$406.08 \\ 75 \times 740\frac{4}{7} \text{ lb.} & = & 555.42\frac{6}{7} \\ \hline 1172\frac{4}{7} \text{ lb.} & = & \$961.50\frac{6}{7} \\ 1 \text{ lb.} & = & 82 \text{ cts.} \end{array}$$

**A Cost System Has Two Functions.** A satisfactory cost system in a textile mill serves two functions. First, it should reveal the normal cost of each separate style or pattern of goods or count of yarn which the mill sells, and it should be so devised as to enable the management to predict with reasonable accuracy the cost in its mill of any style or yarn not previously made. Second, the records and reports regarding pay rolls, production, waste, etc., which are kept for the purpose of maintaining the cost system should be so designed that they will provide valuable information for the operating executives—that is, the superintendents and overseers. Both of these main purposes of the cost system concern the operating executives very closely.

The most important function of a satisfactory cost system is the development of normal costs on each yarn and fabric made, and of pre-determined costs on those styles or yarns proposed. By normal cost is meant the cost which the mill will actually attain under normal conditions, with unusual or special circumstances eliminated. That is, a cost that will reflect truly and equitably the natural

differences in manufacturing procedure which will be encountered in manufacturing any two or more yarns or fabrics. Such figures are principally of importance for sales purposes, and when correctly developed, they will point the way accurately to the fabrics on which the mill can achieve the best results, and to the prices in each case which the mill must obtain in order to show a profit from its manufacturing activities. The intelligent use, by a skilled management, of such data in connection with its selling policies will have a direct effect upon the profits of the mill, even in such difficult times as a depression.

Such pre-determined normal cost figures should reflect every important distinction in processing different rovings, yarns, or fabrics in the mill; they should include all overhead charges; they should allow for waste credits; and should reflect certain features of management policy. Among the latter, these costs should include ample depreciation, based not on the cost of the plant, but on what it would cost to replace it, and they should also include an allowance for a reasonable return on the capital that the mill has invested in its plant and in normal inventories. These figures should be so designed as to take account of the normal amount of curtailment which the mill is likely to experience in the future as indicated by its past records over a long period of time. For quotation purposes the cotton, wool, or silk costs should represent replacement value.

As several of the items mentioned do not in any way correspond to records on the general books, we do not advocate that the cost system should be tied in with the bookkeeping records. A quarterly check-up of reconciliation of these normal cost figures against actual expenditures is desirable, and, as often as indicated by the results of this check-up, the original cost figures should be revised.

To support this periodical check-up, careful reports should be made from each department and summarized in the records. They should include, among other information, such items as the pounds of each style woven, the looms operated on each style, and the pounds of each kind of waste made. Such information reported weekly from the various departments should be tabulated in the office in such a way that the superintendent and other officials can see at a glance just how the performance of any department for

any week compares with its performance during previous weeks and with the budget figures used originally in developing the cost data. Such records should also include a weekly pay-roll analysis, showing the amount of money spent for each kind of occupation in the mill, each figure being shown in the same column with the budgeted amount at the top of the column. The superintendent and overseers by examination of such records can immediately see the trend of any particular detail of production, operation, or pay roll, and promptly remedy any undesirable situation.

Such reports for any week require but a short time for their preparation, and should be available promptly for the inspection of every one concerned. The operating executives should have before them at all times definite records showing the trend of their pay-roll expenditures, their operations, their production, and their waste. Many mills also keep records of repair and supply expenditures by departments, and these again can be tabulated as described. In addition to having the trend of these items visibly displayed, they are also shown in comparison with the budgeted figures on which the original costs were based. There are numerous cases where such pay-roll tabulations alone have resulted in savings of hundreds of dollars per week.

Such a method, which is easily maintained, requiring only a fraction of a man's time in any ordinary mill, provides figures of infinite value for selling purposes, together with data which enable the superintendent and overseers to know accurately at all times the performance of the various departments. In the latter respect it has the further virtue of promptness of information, enabling undesirable situations to be corrected as soon as they develop.

Many mills originally used a type of cost system which was developed principally by agencies whose experience had been chiefly in other industries. This other type of cost system proposes to refigure periodically — in some cases once a week, in other cases once a month — a so-called actual cost for each product of the mill. Any one thoroughly familiar with all the details involved in cotton manufacturing must realize that, in a mill of even moderate variety, a computation of the cost of each product of the mill for a given specified period must involve a tremendous amount of detail if it is to be accurate. The only way to avoid such a vast amount

of computation is to employ short-cut methods, which will result in misleading the mill as to the cost relations between different fabrics. This type of cost system is generally tied in with the book-keeping system, which again adds to the complication of the method and impairs its flexibility.

There is no particular value in having these so-called actual figures on each style available periodically, because even if they indicate that an undesirable condition has obtained during the period in question, the mere statement, let us say, that the cost of 30's warp is  $\frac{1}{2}$  cent per pound higher than the previous month is meaningless to the operating executive until he has gone back and analyzed these figures to determine whether that increase in cost was due to pay-roll increases, to a falling-off in production per spindle, to curtailment, to an unusual expenditure for supplies, or what not.

**Yarn Costs.** The following yarn cost sheet shows how complicated it may be to establish costs. It is necessary to consider the size or the fineness of yarn, as explained later, on page 531.

The yarn is shipped in different containers, such as cones for knitting machines, etc., as explained in the author's book on *Textiles*, page 221. The kind and quality of cotton is expressed according to the classification described on page 216.

The cotton fibers are made into yarn by a process of drawing and twisting. The twisting is expressed as the number of turns or twists per inch. The more twists in the yarn the more strength is provided. A yarn with a small amount of twist is generally soft, pliable, and elastic, and is valuable for hosiery. The amount of twist varies with the yarn and use. Thus yarn used in the warp of the cloth has more twist than that used in the filling.

The capacity of a spinning machine is expressed by the number of spindles (part that holds the container of yarn). In fact, the capacity or size of a mill as well as the cost of a mill is expressed in product per spindle, cost per spindle, etc.

Materials like cotton, silk, and wool are bought in the raw condition by the pound. When they are made into a thread or yarn, the size is expressed in numbers. The sizes are based on the relation between weight and length.

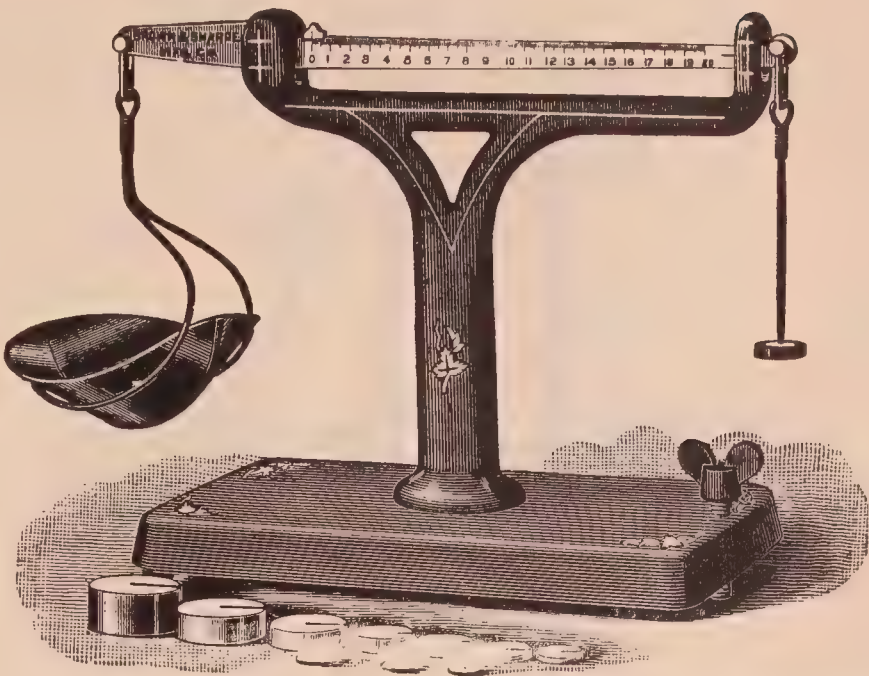
YARN COST CARD

Showing the cost of manufacturing single ply cotton yarn 8's on a cone.  
Yarn — No. or size

Put Up			Cotton	Spinning Twist		Twisting Twist		Lbs. per spindle hour Lbs. per spindle week of — hours	
Cones Tubes Skeins Balls	Beams Chains Spools Cops	Date	Staple Grades Net waste	Warp Filling Hosiery	Turns Turns Turns	Warp Filling Hosiery	Turns Turns Turns		
				Cone 8/1		Tubes 20/2		Ball Warp	
				Labor	Overhead	Labor	Overhead	Labor	Overhead
Roving.....			Cost per lb.	.01223	.02667				
Spinning.....			Cost per lb.	.00768	.01413				
Spooling.....			Cost per lb.						
Twisting.....			Cost per lb.						
Ply spooling.....			Cost per lb.						
Cone winding.....			Cost per lb.	.00728	.00404				
Tube winding.....			Cost per lb.						
Warping.....			Cost per lb.						
Reeling.....			Cost per lb.						
Packing.....			Cost per lb.	.00185	.00187				
Freight.....			Cost per lb.		.00879				
Packing material.....			Cost per lb.		.00780				
Total mfg.....			Cost per lb.	.02904	.06330				
Cotton inc. waste.....					.17710				
Total mill cost per net lb.....					.26944				
Total mill cost per gross lb.....					.25912				
Loss on irregular yarns.....					.00026				
Total mill cost plus yarn loss per gross lb.....					.25938				
Commission and Discount.....					.01952				
Total.....					.27890				
Tare allowance.....					.00569				
Gross cost to assure 6% return on investment					.28459 <sup>1</sup>				

<sup>1</sup> Subject to income-return on investment less than 6%.

To illustrate:  
Worsted yarns are made from combed wools, and the size, technically called the *counts*, is based upon the number of lengths (called *hanks*) of 560 yards required to weigh one pound. Thus, if one hank weighs one pound, the yarn will be number one counts, while if 20 hanks are required for one pound, the yarn is the 20's, etc. The greater the number of hanks necessary to weigh one pound, the higher the counts and the finer the yarn. The hank, or 560 yards, is the unit of measurement for all worsted yarns.



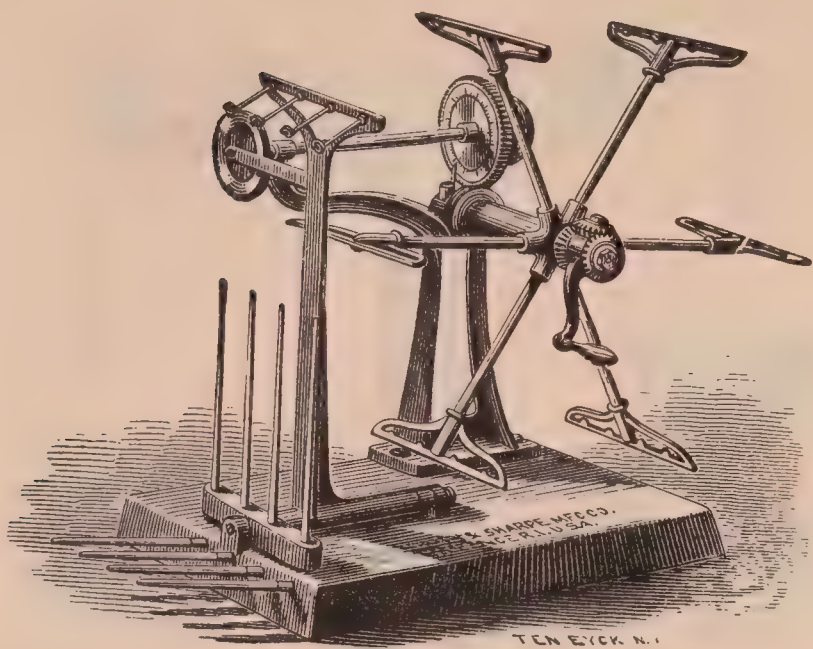
ROVING OR YARN SCALES

These scales will weigh one pound by tenths of grains or one seventy-thousandth part of one pound avoirdupois, rendering them well adapted for use in connection with yarn reels, for the numbering of yarn from the weight of hank, giving the weight in tenths of grains to compare with tables.

LENGTH FOR WORSTED YARNS

No.	YARDS PER LB.	No.	YARDS PER LB.	No.	YARDS PER LB.	No.	YARDS PER LB.
1	560	5	2800	9	5040	13	7280
2	1120	6	3360	10	5600	14	7840
3	1680	7	3920	11	6160	15	8400
4	2240	8	4480	12	6720	16	8960

*Woolen Yarns.* In worsted yarns the fibers lie parallel to each other, while in woolen yarns the fibers are entangled. This difference is due entirely to the different methods used in working up the raw stock. In woolen yarns there is a great diversity of systems of grading, varying according to the district in which the grading is done. Among the many systems are the English *skein*, which



YARN REEL

For reeling and measuring lengths of cotton, woolen, and worsted yarns.

differs in various parts of England; the Scotch *spyndle*; the American *run*; the Philadelphia *cut*; and others. In this book the run system will be used unless otherwise stated. This is the system used in New England. The run is based upon 100 yards per ounce, or 1600 yards to the pound. Thus, if 100 yards of woolen yarn weigh one ounce, or if

1600 yards weigh one pound, it is technically termed a No. 1 run; and if 300 yards weigh one ounce, or 4800 yards weigh one pound, the size will be No. 3 run. The finer the yarn, or the greater the number of yards necessary to weigh one pound, the higher the run.

LENGTH FOR WOOLEN YARNS (RUN SYSTEM)

No.	YARDS PER LB.	No.	YARDS PER LB.	No.	YARDS PER LB.	No.	YARDS PER LB.
$\frac{1}{8}$	200	1	1600	2	3200	3	4800
$\frac{1}{4}$	400	$1\frac{1}{4}$	2000	$2\frac{1}{4}$	3600	$3\frac{1}{4}$	5200
$\frac{1}{2}$	800	$1\frac{1}{2}$	2400	$2\frac{1}{2}$	4000	$3\frac{1}{2}$	5600
$\frac{3}{4}$	1200	$1\frac{3}{4}$	2800	$2\frac{3}{4}$	4400		

*Raw Silk Yarns.* For raw silk yarns the table of weights is :

- 16 drams = 1 ounce
- 16 ounces = 1 pound
- 256 drams = 1 pound

The unit of measure for raw silk is 256,000 yards per pound. Thus, if 1000 yards — one skein — of raw silk weigh one dram, or if 256,000 yards weigh one pound, it is known as 1-dram silk, and if 1000 yards weigh two drams, the yarn is called 2-dram silk; hence the following table is made :

- 1-dram silk = 1000 yards per dram, or 256,000 yards per pound
- 2-dram silk = 1000 yards per 2 drams, or 128,000 yards per pound
- 4-dram silk = 1000 yards per 4 drams, or 64,000 yards per pound

DRAMS PER 1000 YARDS	YARDS PER POUND	YARDS PER OUNCE
1	256,000	16,000
1 <sup>1</sup> / <sub>4</sub>	204,800	12,800
1 <sup>1</sup> / <sub>2</sub>	?	?
1 <sup>3</sup> / <sub>4</sub>	146,286	9143
2	128,000	8000
2 <sup>1</sup> / <sub>4</sub>	113,777	7111
2 <sup>1</sup> / <sub>2</sub>	102,400	6400
2 <sup>3</sup> / <sub>4</sub>	93,091	5818
3	?	?
3 <sup>1</sup> / <sub>4</sub>	78,769	4923
3 <sup>1</sup> / <sub>2</sub>	73,143	4571

Place the missing yards in the space marked.

Silk yarn is often numbered by a metric system of weight and length. The weight unit is the denier — .05 gram. The length unit is the meter. The number of deniers equal in weight to 450 meters is called the size of the yarn. To illustrate: If 450 meters of silk is weighed and found to weigh .8 gram, then the size of the yarn is  $\frac{.8}{.05}$  or 16 deniers. The silk may vary in fineness by two deniers, hence the size is written 16/18.

*Linen Yarns.* The sizes of linen yarns are based on the *lea* or cuts per pound and the pounds per spindle. A cut is 300 yards and a spindle 14,000 yards. A continuous thread of several cuts is a hank, as a 10-cut hank, which is  $10 \times 300 = 3000$  yards per hank. The number of cuts per pound, or the leas, is the number of the yarn, as 30's, indicating  $30 \times 300 = 9000$  yards per pound. Eight-pound yarn means that a spindle weighs 8 pounds or that the yarn is 6-lea ( $14,400 \div 8 \div 300 = 6$ ).

*Cotton Yarns.* The sizes of cotton yarns are based upon the system of 840 yards to 1 hank. That is, 840 yards of cotton yarn weighing 1 pound is called No. 1 counts.

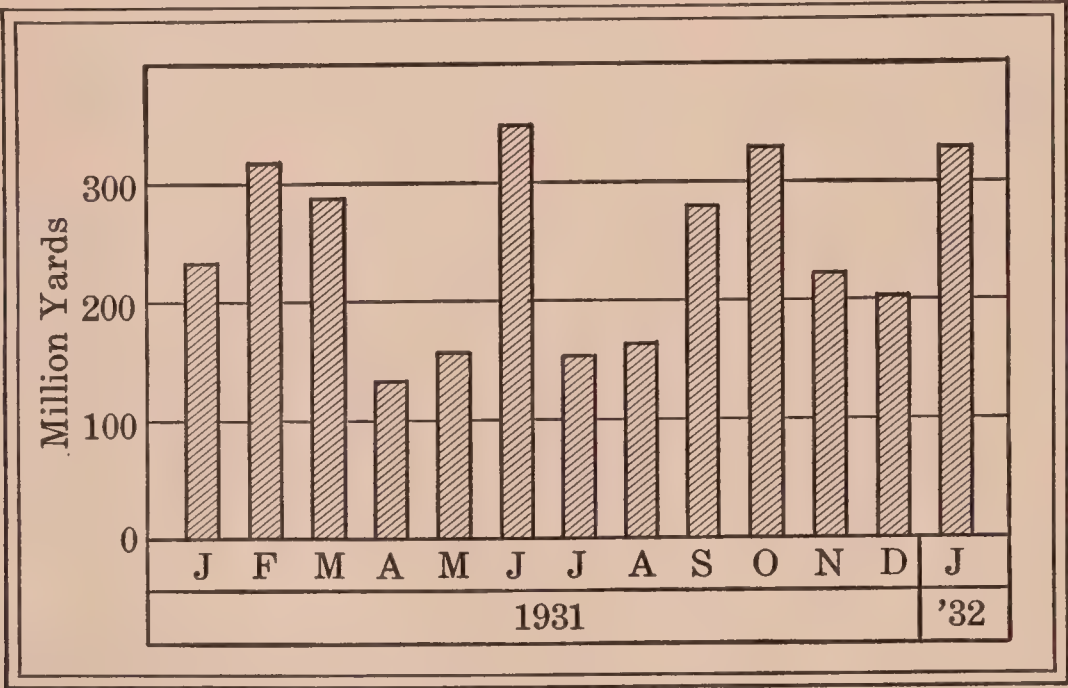
*Spun Silk.* Spun silk yarns are graded on the same basis as that used for cotton (840 yards per pound), and the rules and calculations that apply to cotton apply also to spun silk yarns.

*Two or More Ply Yarns.* Yarns are frequently produced in two or more ply; that is, two or more individual threads are twisted together, making a double twist yarn. In this case the size is given as follows:

2/30's means 2 threads of 30's counts twisted together, and 3/30's would mean 3 threads, each a 30's counts, twisted together.

**Diagrams, Charts, and Graphs.** Diagrams, charts, and graphs are very useful in accountancy, in making comparisons, showing progress of departments, sales, etc., as described on page 19.

*Sales Expressed Graphically.* By means of graphs, increases or decreases in commodity sales may be noted. A total of 338,000,000



GRAPH OF SALES OF COTTON CLOTH

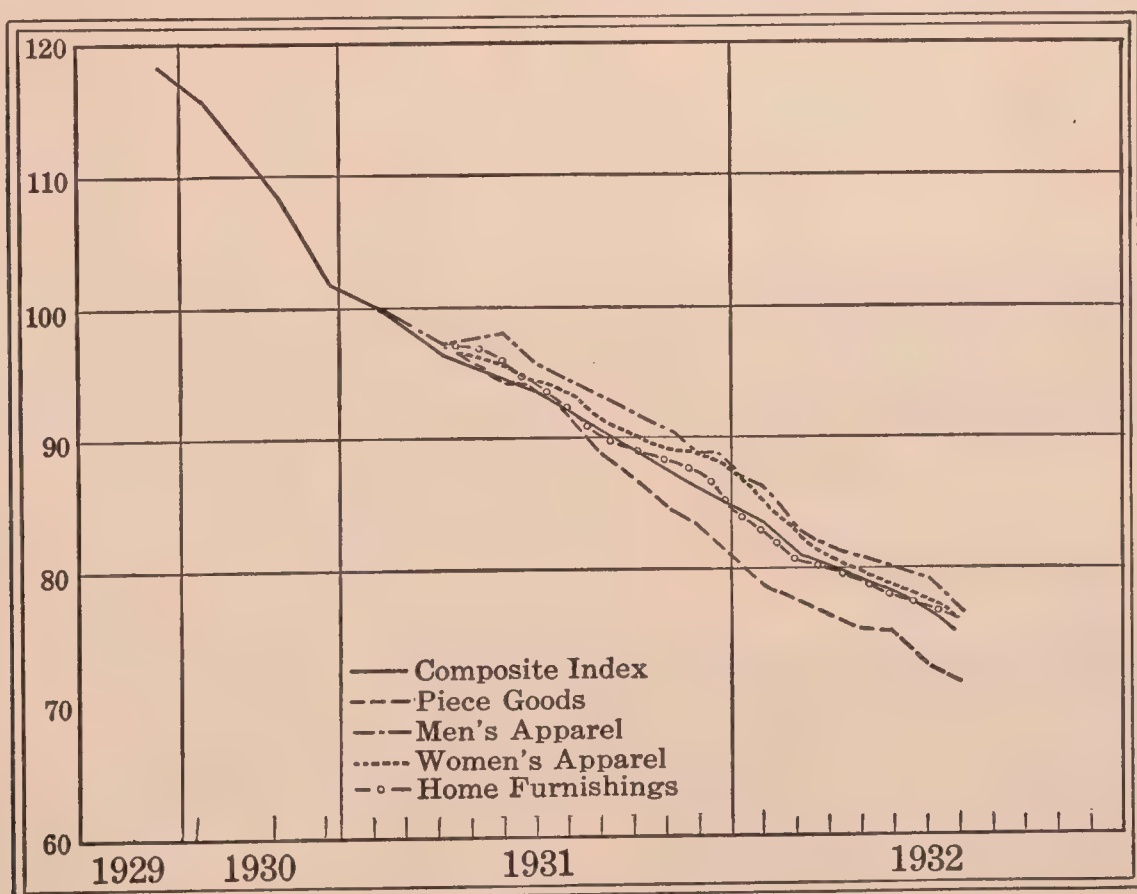
yards of cotton cloth was sold by the mills in January, 1932, as compared with 289,000,000 yards in January, 1931 — a gain of 17 per cent. The cotton textile industry has shown a relatively high level of production and sales in recent months, indicating a definite improvement in activity, although low price levels remain.

Shipments from the mills were 27 per cent heavier in January of 1932 and cotton cloth production was 15 per cent above the same month of 1931. The graph for 1931 and 1932 shows increased production and sales of textiles contrasted sharply with most other basic industries, which were generally showing restricted output.

**Stock Records.** The use of continuous stock records will enable a company to know at any time the status of the business. Such records provide a constant inventory of incoming and outgoing stock, thus forming a perpetual inventory record. See page 539 for a record card.

The requirements of a good stock record demand a maximum amount of information with the minimum amount of labor. An adequate record should show (1) the articles on hand with proper serial and register numbers, (2) the lot number, (3) description of the article, such as size, color, and other characteristics for identification, (4) cost, (5) quantity received, (6) quantity remaining (by subtracting the amount sold).

It is very desirable to know how fast the article is sold so that the good sellers may be known from the poor sellers. Additional information may be added to the stock record stating (1) when the article was received, (2) when it was sold, (3) mark-up price expressed in percentage, (4) mark-down price expressed in percentage, (5) number of returns or cancellations. In addition, the sources of information should be recorded, such as obtained from (a) order, (b) invoice, (c) coupon from price ticket, (d) sales slip, (e) credit slip.



GRAPH OF PRICE TREND

## WORTH ST. CONVERTERS

Packing Order No. 66

40 WORTH ST.

NEW YORK CITY

Date July 10th, 1934

## PACKING ORDER and SHIPPING INSTRUCTIONS:

To U. S. Finishing Co. Providence, R. I.

QUALITY Crescent

From Lot No. 501

Take all pcs. each 35/40 yds. per pc. Put up Doubled and Rolled  
Blue PapersPack into 6 ~~Bales~~ Cases of 50 pcs. each, lined with Manila Paper ~~Not Strapped~~  
Iron StrappedThese Goods Must Be Invoiced Latest  
July 25th

Stamping and Ticketing Instructions

Assortment for each case  
10 pieces of each colorCrescent Ticket  
Hang Tag  
with color No. and yds.

ASSORTMENT: Packages always to be proportionately assorted unless otherwise specified.

Use Package Numbers: 100/105

SAMPLE REQUIREMENTS: IMPORTANT Fill these before invoicing and ship at once.

12 Headends ticketed as goods

STANDARD INSTRUCTIONS: State cubic dimensions, net, legal and gross weight on invoices.

**This is important.** Invoices without this information are useless to us so do not send them in incomplete. We require invoices in triplicate.

SHIPPING INSTRUCTIONS: When ready, invoice and ship as below.

Ship via Freight

To N. Y.

## WORTH ST. CONVERTERS

Lot No. 501

40 WORTH ST.

NEW YORK CITY

New York, July 5, 1934

To U. S. Finishing Co. Providence, R. I.

Finish the following goods as per instructions below. Total Bales 4

Shipped from King Phillip Cotton Mills, Fall River

Grey Construction 40" 60x56 Voile Total Pieces 219

Hard Twist Total Yards 11973

*Send Sample Cut from Grey Goods.*

Lot	Bale	Yards	Yellow	Style	Finished Width
46750	A100/103	11973	101	Crescent	39/40"
					Finish
					Mercerised Voile Finish (As Sample Attached)
					2000 yards white
					2000 " Lt. Pink #2
					3000 " Medium Green #5
					3000 " Navy #7
					2000 " Black

*Put up* Cut into lengths of 35/40 yds

Fold Doubled and Rolled

Stamping or Ticketing See Packing orders

Papering Blue

No boards wanted in pieces Thick Card Boards to go in each piece

*Approval* Send us a headend showing finish and ticketing and stamping for approval before proceeding with lot. Also  $\frac{1}{4}$  yd. reference of each color or printed combination. The entire lot must be finished, ticketed and stamped exactly as in headend or reference approved by us.

*Reference samples must be mailed 24 hours after our approval.**Samples* Please send us*Packing* Use  $\frac{7}{8}$ " lumber for cases, and 10 $\frac{1}{2}$  to 12 oz. burlap for bales.*Shipping Instructions* To follow*Weights* Exact gross and net weights and measurements must be stated on invoice.

Legal weight also wanted whenever goods contain boards and are papered.

*Seconds* Please write for instructions as regards stamping, packing, etc.

WORTH ST. CONVERTERS

No marks, numbers or labels except our own are to appear on goods or packages, unless otherwise instructed.

Per J. H.



Quality 144  
Width

GREY GOODS STOCK RECORD

Card No. 1

Description Poplin

In-voice Date	In-voice No.	Con-tract No.	Case No.	QUANTITY		STEAMER	Our Invy. No.	Cus- toms. Entry No.	Re- leased from Bond	W'house Rec.No.	SHIPMENTS			RUNNING RECORD OF SHIPMENTS		
				Pcs.	Yards						Date	Name	Chg. or Lot No.	Date	Pcs.	Yards
1932																
4/5	4200	1069	14321	25	2501	Cedric	C/E	732690			4/16/32	Bradford	476	4/16/32	50	5000
4/5	4200	1069	14322	25	2499	Cedric		732690								
4/12	4206	1069	14330	25	2500	Lancastria	C/E	736476								
4/12	4206	1069	14331	25	2502	Lancastria		736476		22476						
4/19	4210	1069	14339	25	2497	Baltic	W/E	25490		22476						
4/19	4210	1069	14340	25	2501	Baltic		25490		22476						
4/19	4210	1069	14341	25	2509	Baltic		25490		22476						
4/19	4210	1069	14342	25	2498	Baltic		25490		22476						

Quality 144

Width 37<sup>1</sup>/<sub>2</sub>"

Description Poplin

## QUESTIONS

1. Why is the subject of accounting and cost finding important to the textile and clothing manufacturer?
2. How is the subject of accounting and cost finding related to the subject of economics of clothing?
3. Explain in detail, with examples, the difference between (a) accounting, (b) bookkeeping, (c) cost accounting.
4. (a) Describe the purpose of an invoice. (b) Explain the essential points of an invoice.
5. What is meant by the expression "open account"?
6. (a) What is the purpose of a ledger? (b) Explain the theory of ledger accounts.
7. How may the correctness of accounts be quickly checked?
8. Explain the difference between trial balance and balance sheet.
9. In the statement of a mill, what is meant by the terms: (a) assets, (b) liabilities, (c) inventory?
10. Explain the meaning and importance of (a) profit, (b) loss, (c) net or prime cost, (d) gross or full cost, (e) gross selling price, (f) net selling price.
11. (a) Name the factors that determine the success of a business man. (b) How is the success of a business man usually expressed?
12. (a) What is meant by the expression "expenses of business"? (b) Name some of the items included under expenses.
13. How may a textile manufacturer or clothing manufacturer increase his profits?
14. How may production costs be determined?
15. What is meant by the expression "cost finding practices"?
16. Explain in detail the terms: (a) labor, (b) material, (c) overhead charges.
17. Explain some of the methods of computing overhead charges.
18. Give briefly the outline of estimating the cost of manufacturing.
19. What are the average percentage costs of the (a) material element, (b) labor element, (c) overhead element in clothing and textiles?
20. Explain how the total cost of manufactured wearing apparel, *i.e.*, a pair of shoes, may be determined.
21. Explain different methods of apportioning overhead, with illustrations.
22. (a) What is meant by the expression "direct distribution, overhead"? (b) How may it be computed?
23. How may a manufacturer regulate costs in clothing and textiles?
24. What is meant by alligation? Give an example.

- 25. Why is yarn cost a rather difficult part of textile manufacturing?
- 26. How is the size of yarn computed?
- 27. Give briefly a method of cost finding in cotton yarn.

PROBLEMS

A. Find per cent of gain or loss :

<i>Cost</i>	<i>Gain</i>	<i>Cost</i>	<i>Loss</i>
1. \$1660	\$175	6. \$6110	\$112
2. \$1845	\$135	7. \$5880	\$ 65
3. \$1997.75	\$412.50	8. \$3181.10	\$108.75
4. \$2222.50	\$319.75	9. \$7181.49	\$213.60
5. \$3880.11	\$610.03	10. \$3333.19	\$ 28.90

B. Find the per cent gain or loss on both cost and selling price :

<i>Cost</i>	<i>Selling Price</i>	<i>Cost</i>	<i>Selling Price</i>
1. \$1200	\$1500	6. \$2475	\$2360
2. \$1670	\$1975	7. \$1650	\$1490
3. \$2325	\$2980	8. \$4111.50	\$2880.80
4. \$4250.50	\$5875.75	9. \$4335.50	\$4660.60
5. \$3888.80	\$4371.71	10. \$2880.17	\$2551.60

*Example 1.* An article costs \$5 and sells for \$6. What is the percentage of profit? *Ans.* 16⅔%.

*Process.* Six dollars minus \$5 leaves \$1, the profit. One dollar divided by \$6, decimally, gives the correct answer, 16⅔%.

*Example 2.* A dealer sold tools at a profit of \$98. What was the cost of the tools, if he sold to gain 35%?

FORMULAS

$Gain\ or\ loss = Cost \times rate\ of\ gain\ or\ loss$

$Cost = \frac{Gain\ or\ loss}{Rate\ of\ gain\ or\ rate\ of\ loss}$

$Selling\ Price = Cost\ (100\% + rate\ of\ gain)\ or\ (100\% - rate\ of\ loss)$

$Cost = \frac{Selling\ Price}{100\% + rate\ of\ gain}\ or\ \frac{Selling\ Price}{100\% - rate\ of\ loss}$

C. Find the selling price in each of the following problems :

<i>Sold to Lose</i>	<i>Cost</i>	<i>Sold to Gain</i>	<i>Cost</i>
1. 16⅔%	\$96	6. 37%	\$250
2. 20%	\$115	7. 33%	\$644.50
3. 30%	\$48	8. 41%	\$841.75
4. 19%	\$112.50	9. 29%	\$108.19
5. 20½%	\$187.75	10. 22½%	\$237.75

*D.* What is the percentage of profit, if an article costs \$8.50 and sells for \$10?

Solve the following examples by the table on page 513.

1. I bought a machine for \$584 f.o.b. New York City. Freight cost \$1.05. I desire to sell to gain 8%. If the cost to do business is 18%, what should be the selling price?

2. Goods were sold for \$367.75 at a loss of \$125. Find the cost of the goods.

3. Goods costing \$145.25 were sold at a profit of \$28.50. For how much were they sold?

4. A manufacturer bought  $4\frac{1}{2}$  yards of silk at \$1.80 per yard, and gave in payment a \$10 bill. What change did she receive?

## CHAPTER XIII

### THE BUSINESS CYCLE

**Definition.** We all know that business is subject to more or less regular “ups and downs,” and does not move along on a general level of activity. A period of prosperity or “good times” is followed by a period of depression or “hard times.” A period of slow recovery may then merge into another period of prosperity. Such rhythmic movements in the rise and fall of business activity are called business cycles. These changes in business events seem to follow each other in a definite sequence, and to recur at more or less regular intervals.

Some economists have declared such fluctuations appear once every ten years. Other economists deny any such regularity in the occurrence of the cycle, but recognize that such “ups and downs” have recurred at intervals ever since the development of business on a large scale — within the past century or more.

**Types of Depression.** Business depressions may be of two types : general and special. General depressions are those affecting all business activity, while special depressions are usually restricted to one industry and have their cause in some particular condition pertaining to that industry. The general depression is usually world-wide in its effects, and brings general hard times. It is the type of depression that marks the falling motion of the business cycle.

The depression period of the cycle may be slight and of short duration, or it may be severe, even reaching the proportions of a panic. A panic represents a profound distrust of banking and credit structures, and results in unreasonable actions by a few or many persons in trying to salvage their own interests regardless of the welfare of others. Thus runs on banks, hoarding, etc., characterize a panic. A depression is not necessarily a panic, although panics do sometimes occur during depression periods. Some of the more severe depressions in the United States have been called

panics. Severe business depressions have taken place in the United States in the years 1837, 1857, 1893, 1920, and 1929. Less severe depressions, or "bad times," have occurred also in 1814, 1825, 1847, 1865, 1884, 1901, 1907, and 1914.

The regular descending movement of prices and business activity occurring in the course of the business cycle may be aggravated or complicated by some outside condition. Thus the depression of 1929-1932 is unlike many of those preceding it, because it is in many respects due to the results of the World War and the treaties that ended it. The attempt to pay war reparations and inter-governmental war debts, and the erection of tariff walls as barriers to foreign trade have been contributing causes to the depression. The World War, in addition, represented the destruction of a phenomenal proportion of the wealth of the world, as well as disrupting the whole social, economic, and political foundations of the nations involved. The destruction of capital goods was of such vast proportions that it has taken half a generation for the world to recover. There are some who say that the reconstruction and replacement of such destroyed wealth offered employment to workers, but they fail to recognize that the labor and capital consumed in the War might have been employed to give greater benefits to society. The unparalleled expansion of business and productive activity in the United States that followed recovery was abruptly ended in the crisis of 1929 and the depression period that followed.

**Stages of the Business Cycle.** Four general stages in the development of the business cycle have been generally recognized by economists. Once begun, these phases seem to follow each other in logical sequence, each new phase having its origin in the developments of the preceding one. Thus we have: (a) the period of prosperity, (b) the period of crisis, (c) the period of depression, and (d) the period of recovery. Economists are generally agreed that business cycles do not generally follow immediately one after the other, but are usually separated by periods of more or less settled activity. The causes leading up to a new cycle are not fully established. Economists differ in their explanations and no one satisfactory theory has emerged. Some of the suggested theories will be described after we have completed the analysis of the various stages in the cycle.

**The Period of Prosperity.** The discussion of the business cycle ordinarily starts with the period of prosperity, when business activities are at a high peak, prices are rising, labor is in demand and is being paid high wages, business men are receiving large profits and are borrowing money and expanding their operations in order to supply the increased demand for products. A spirit of optimism prevails, stock market prices go up, and we have what is called "boom times." Such a condition existed in the clothing industry during the World War when the manufacturers were receiving higher prices than they had ever expected, consumer demands for clothing became greater and greater, errand boys and apprentices earned as high as \$25 a week, and workmen earned as high as \$100 a week. The laboring classes and clerks were able to wear silk shirts and dresses, and every one was enjoying an unprecedented wave of prosperity.

The question may be asked as to why such a period of prosperity, once begun, does not continue indefinitely. If we made a careful analysis of the clothing industry, we should find that the very elements that contribute to high profits in the beginning of a period of prosperity are exactly the elements that cause business costs to become higher than selling prices and in turn bring about the crisis leading to depression.

Let us consider the steps as they occur :

(a) Increased demand causes a gradual rise of prices, spreading from one commodity to a constantly greater number.

(b) The fixed expenses of business (see page 517) do not increase as fast as prices for the manufactured products, so that the business man finds his profits increasing.

(c) The rise in prices spreads gradually to raw materials, etc., hence the costs of business also go up.

(d) Wages and employment increase, there is overtime work, and the costs of business go still higher.

(e) Management becomes careless and inefficient because of the easy profits.

(f) Labor becomes more independent and less efficient because the demand for labor is greater than the supply, and keeping one's job is not so important.

(g) Because of increased loans for business expansion interest rates rise.

(*h*) As the costs of production go up we find that raw materials, labor, capital charges, etc., rise faster than the price of the finished product.

(*i*) Manufacturers find themselves with an increasing supply of goods that they are unable to dispose of at the higher prices.

(*j*) Prices of stocks, etc., fall as the speculators realize that marginal profits are decreasing.

(*k*) Bank reserves are lower and loans are not granted as freely as before.

(*l*) Trade papers, banking information sheets, and newspapers begin to comment on the shrinkage of business, the excess production, etc.

(*m*) Pessimism begins to replace the enthusiasm of the boom period and goods are dumped on the market for what they will bring. Paper profits become losses.

The period of prosperity ends and we now have the period of crisis, resulting from the same forces that produced prosperity.

**The Period of Crisis.** The period of crisis is marked by a rapid liquidation process. That is, instead of producing more and buying more, every one is anxious to dispose of his surplus product and to produce as little as possible. Manufacturers try to dispose of their products even at low prices in order to meet their loans. Banks call their loans, stocks and bonds fall further in price. Factories are shut down, causing much unemployment and consequent loss of purchasing power. Business failures and bankruptcies increase. Because of the credit connections of one business with another one bankruptcy may cause several other business failures. It is during this period of rapid liquidation that panics sometimes occur. The inelasticity of credit resources to meet the demand caused many of these panics. The organization of the Federal Reserve system has done much to overcome this difficulty and to prevent the development of panic conditions. The period of crisis, which is ordinarily short, gradually gives way to a more leisurely decline or liquidation and the period of depression begins.

**The Period of Depression.** The depression period may last only a short time, giving way almost immediately to an immediate recovery, or it may last for a period of years. During this time business is at a practical standstill and "hard times" prevail. Production

is cut down to a minimum ; there is much unemployment ; and consumer demand is accordingly at a low point. Prices continue to decline, but not as rapidly as before. A spirit of pessimism prevails, and no one is willing to launch a new enterprise. Profits are at a minimum.

At the same time, certain other developments are taking place that will pave the way for recovery. Just as the boom period carries along with it certain checks to prosperity, so the depression period witnesses certain readjustments that make for new prosperity. Thus, the process of liquidation brings about a decline in the costs of production as well as in prices. Raw materials fall in price, wages decline greatly because of unemployment, labor becomes more efficient and less restless, management eliminates wasteful processes for the sake of economy, bank reserves increase and the interest rate declines because of the decrease in the demand for loans. In other words, many of the readjustments necessary for recovery have been made and the period of recovery begins.

**The Period of Recovery.** During the depression period production has been greatly curtailed, and the surplus commodities have been gradually consumed. Retail stocks are gradually sold out and it becomes necessary for retailers to replenish their supply. The demand for goods gradually causes factories to renew production activity. The low interest rates and the willingness of banks to make loans cause certain producers to take advantage of them and expand their activities. Meanwhile speculators, sensing this revival of business activity, have by bidding caused the price of stocks to rise, thus lending encouragement to producers. Timidity and pessimism gradually give way to optimism, and we find business improving, prices going up, and employment increasing. The business cycle has completed its course and is ready once more for the beginning of a new period of prosperity.

**Theories to Explain the Business Cycle.** *The Sunspot Theory.* One of the many theories that have been advanced to explain the recurrence of the business cycle is the sunspot theory. That is, certain spots that appear periodically on the sun affect the climate of the earth, which in turn affects the agricultural production. Because of the importance of agriculture to industry, it is believed

that any great change in the output of crops will so upset the normal equilibrium of prices that a new business cycle may be set in motion. This theory is not accepted by scientists or economists, however, as an adequate explanation of the rhythmic change in business activity.

It is true that abnormal weather can have a great effect on certain industries, particularly on the clothing and wearing apparel industry. Clothing and wearing apparel products are planned and manufactured on the basis of normal weather at the proper season. This means, in the United States, a cold dry winter with ice and snow from about December 15 to March 15, a gradual development of warmer weather, with much rain, to June 15, then the hot season from June 15 to September 15, when fall sets in with the return of frost during the night and the changing of the foliage. It is impossible to state the exact date when these changes of season take place, but they are approximately three months in length. These changes in season are sufficiently marked to call for distinct changes in weight, warmth, color, and design in clothing and wearing apparel. In fact, each month has sufficient change to warrant a change in clothing in both design and warmth, and many designers have provided not only seasonal but also monthly changes or styles.

Sometimes the seasons are abnormal. Scientists say this is due to sun spots, which influence the weather. To illustrate: If a winter is mild, without much snow, as in the case of the winter of 1932, then the full stock of overcoats, mufflers, rubbers, etc., is not sold. A mild winter means usually a cold late spring, which delays for a while, if not completely, the purchase of much spring clothing and wearing apparel. A cool summer often means a warm fall, which delays the purchase of both summer and fall clothing. These abnormal changes in the weather not only delay the purchase of clothing, but often mean that people will do without the purchase of much seasonal clothing. The mild winter and late spring of 1932 caused a falling off in the production of textiles at a time when textiles should be sold in the largest amounts, and when the prices were very low, as low as before 1914. Unfavorable weather, such as a mild winter, will mean that people will not purchase as many furs or as much heavy clothing as in a cold winter.

Hence, such an unfavorable year is reflected in the profits of the fur and overcoat lines.

Similarly, during the years 1930 and 1931, we had an unusually large cotton crop, due in part to exceptionally good weather conditions. The effect of such great supplies of cotton for two consecutive years caused a drop in the price, which meant disaster to many cotton growers. The same thing occurred with respect to rubber production. On the other hand, rainy weather or a frost may cause a reduction in the yield of cotton sufficient to raise the price considerably. A mild winter will allow for the development of the boll weevil and unusual warmth of summer nights may reduce the yield. Thus, it is apparent that abnormal weather may cause fluctuations in particular industries, but the sun-spot theory has not been considered adequate to explain the general business cycle.

*The Political Theory.* During political campaigns we always find one party blaming the other for creating bad times by means of unwise legislation, dangerous political policies, etc. On the other hand, if times have been good, we find the party in power claiming the credit for "prosperity." But experience has shown that the causes of ups and downs in business are usually too widespread to have been controlled by, or seriously affected by, any political action. The most severe depressions have been world-wide and have occurred without reference to the behavior of any particular government or to any governmental policy. Favorable or adverse factors in business will sooner or later extend beyond national frontiers, and the same social and economic disturbances occur under any political régime. This does not mean that certain legislation, like tariffs, etc., can not affect business trends. It does mean, however, that the general rhythmic movement known as the business cycle is not due to the actions of political parties.

*The Over-Production Theory.* There are some economists who say that the fluctuations in business activity are due to an over-production of commodities. This explanation seems hardly consistent with the earlier description of man's wants as being infinite and capable of great expansion. There is not over-production in general, but it is possible to have over-production of particular

commodities at a certain time. That is, a particular industry may find that production has increased to the point where it is impossible to sell the goods at a profit, or indeed, in some cases, to dispose of them without a great loss. Such a condition may arise because of the more or less haphazard manner in which many men engaged in the wearing apparel industry carry on their business. They are not sufficiently trained, and, while they may succeed more or less in prosperous times, they fail in periods of depression.

If we study well-organized industries, we shall find that there is a movement on the part of the managers to keep their output at a point which will give them maximum profit. Under-production would invite more competition. With the boom of prosperity, more and more manufacturers enter the wearing apparel field, which causes larger and larger amounts of wearing apparel to be produced, and this is expected to be sold at higher prices. In the manufacture of wearing apparel under free competition, the question of the regulation of the supply is very important. This is particularly so when there are many competitors. Each one may be obliged to work more or less independently, and there may be over-production. This is particularly serious in the clothing industries because much of the product is seasonal in character and must be disposed of before the end of the season regardless of price. Changes in style make it impossible to hold the goods until there is a demand for them at a price sufficient to cover the cost of production.

Over-production is due in great measure to the policy of mass production which is distinctly American. It began with the Industrial Revolution and has continued to the present. To illustrate: At the beginning of the factory period, machinery was responsible for the new prosperity era in civilization. At first wage-earners were alarmed at the displacement of man power. Then it was found that the cost of production was so much reduced that a much greater market was opened up for the cheaper products. Additional factories were needed to meet the demand and absorbed the labor which had been displaced elsewhere. But that was a period of transition — a time when labor-saving devices and new cheap goods were much in demand; before they had been too

expensive and out of reach of the average family. But after the period of transition, the situation could continue only when the factors of production, consumption, etc., adjusted themselves in correct ratio. But the adjustment did not take place, machinery continued to be improved, always displacing labor, always increasing output with less effort. However, the demand for the most common, easily produced manufactured goods reached more or less of a limit, and excess goods began to accumulate, resulting in such over-production as to cause unemployment.

If this great mass production had been developed with the equally necessary balancing force — consumption, — then prosperity would have continued. Of course, it is true that mass production has brought blessings by releasing man from much burdensome work and providing many supplies to meet our wants, but in addition it has also produced more than could be consumed. Mass production reached its zenith after the War, 1920–1930, when it developed a new industrial system of economy in costs, the reduction in overhead, the ability to produce good articles at an unbelievably low price. This was the basis of a new industrial system. There is considerable emphasis at the present time discrediting the theory of over-production. While there may be temporary over-production in a particular industry, no nation has yet found itself too abundantly supplied with economic goods. The term over-production usually veils a serious weakness in distribution.

Then again much harm often comes from the excessive use of the customary American methods of stimulating sales and widening demand. Advertising, high-pressure selling, and the re-creation of markets through the agency of style are legitimate and necessary instruments of American industrial growth. However, their complete abandonment would mean permanent dislocation of the social economy and decades instead of merely a few years of suffering. The principle that American industry must correlate demand and supply forces on us the practice of producing only what can be sold at a profit, which excludes everything that is likely to accumulate on the shelves as excess inventories, and everything the sale of which will entail a cost in excess of reasonable possibilities of profit.

To summarize the advantages and disadvantages of the factory system of production: As the result of the introduction of machinery, especially automatic machinery, the production per operative or worker has become so great as to give us great benefits: (a) the hours of labor have been reduced, (b) the cost of production is less because the production per worker becomes much greater, (c) increase in the quantity of production, allowing more people to use better wearing apparel. On the other hand, the introduction of the factory system and highly specialized machines has certain handicaps. One disadvantage of the factory system of organization is that the mill or factory is equipped to make certain textiles and no others. In other words, machines are devised to do a special operation on a certain kind of material, and no other. For example, a worsted mill can produce either English hard-twisted worsted or soft (French) twisted worsteds used mostly for women's wear, but not both. It can not produce woolens. The same is true with cottons. A mill may be equipped to produce medium-grade, or high-grade cottons, but not both. It often happens with the change of styles that worsteds may be more popular than woolens, and the result will be that the worsted mills will be running overtime while part of the woolen mills will be idle. Then again a mill is laid out with a large number of machines, which require a large order to start the mill and keep it running from day to day. After the World War, automatic machinery had been invented in such form that more fabrics were made than the market could absorb, giving us over-production, which lowered prices and eventually caused mills and factories to shut down, because of the unsold surplus.

There have been many plans offered for solving this situation of over-production when adequate purchasing power is lacking. One of these plans is a movement toward a shorter work week, which would give labor an opportunity — leisure time — to make use of new commodities that have been created, and also increase wages.

*The Speculation Theory.* Excessive speculation is another explanation offered to explain the business cycle. Often during the period of prosperity the banks may become very liberal in loaning money for the purchase of equipment, stock, etc. Some traders buy raw materials, hoping to sell at a higher price — a

process which is called speculation. If speculation is carried to extremes, banks may lose much of the money that was loaned. The stock market is an establishment that has a proper function in the community, but it has at times abused its privileges. To illustrate: The stock market in 1929 gave a higher rate of interest and borrowed money that might otherwise have gone into business channels. The consumer purchasing power began slowly to decline from this time. Then the banks began to call for the money loaned on securities and the price of securities naturally declined. People were unable to meet their obligations and many went into bankruptcy. Banks began to fail, were unable to collect on notes, and the prices of their securities declined. Then fear crept in and people began to lose faith in banks and business. Money was withdrawn and placed in safety deposit vaults and hoarded in homes. This money was withdrawn from banks in excess of regular business needs.

The question may be asked: Are we justified in being too thrifty, saving too much? Will we accumulate too much capital goods, which we may not be able to sell? Since the sum total of human wants is infinite, business men will always find new avenues for the investment of new funds. Over-production in any one field brings about a decrease of the rate of profit in that field, which naturally discourages additional investment.

Of course, if the day should arrive when every one has all the consumer goods needed to maintain his standard of living, then it may not be necessary to save, but we are far from that day. Saving increases the supply of capital goods, which increases the supply of consumer's goods — the real test of a people's standard of living. Of course, wages must be high so as to bring these goods within the purchasing power of the people.

*Theory of Unequal Distribution of Wealth.* Another explanation given for the ups and downs of business is the fact that wages do not keep in line with the increase of wealth in the nation. Prices increase more rapidly in times of prosperity than wages do, hence the consumer purchasing power is insufficient to absorb the increased production.

To illustrate: If wearing apparel or other goods are created in large quantities of varied composition and style, the demand for

such may be great, but the consumer, because of low wages, may not be able to purchase them. Such a condition, carried on, would soon cause over-production in all lines. Then the over-production would lead to curtailment, which means lower wages and less purchasing power, finally producing a depression, as goods could not be sold.

One criticism of the present system of mass production is that it fails to distribute its products evenly among the whole population — it makes many very wealthy, others very poor. According to statistics prepared by W. I. King, who ten years ago made a study of records of the probate courts of Massachusetts — one of the strong industrial States of the Union — two per cent of the people own 60 per cent of the wealth and receive 20 per cent of the income ; 33 per cent of the people own 34 per cent of the wealth and receive 40 per cent of the income ; 65 per cent of the people own six per cent of the wealth and receive 40 per cent of the income. Similar records show that at that time 10 per cent of the people owned approximately half of the wealth of the country.

Various devices have been suggested to limit the amount of wealth — which means to limit the amount of property. The following are the common methods: (a) regulation of prices, (b) regulation of corporation finance, (c) income tax, (d) inheritance tax, (e) public ownership of public utilities.

During the last decade or two a feeling has risen among business men that the increased earning power of the worker is the foundation stone of prosperity. Therefore, to make industry prosper means to make labor prosperous by giving higher wages, which would create a larger market, thus increasing the growth of the industry. Some people may say that with increased wages would come increase in the cost of production, but the increase of cost of production has been taken care of by inventions of automatic and higher production machinery, plus better business management.

While each year brings to the workers an improvement in wages and living conditions, nevertheless they are sharing less proportionally in the prosperity or wealth they are producing. In fact, in all our industrial centers, particularly mill and clothing centers,

there are thousands in misery and destitution because of small incomes.

In a falling market, the prices of both the raw material and finished fabric decline. The fabric prices will often decline lower than justified by the cost of the raw material. When this condition takes place, of course, the manufacturing profits are reduced. In order to overcome this loss, the manufacturer must, if possible, readjust his labor and other costs. Hence the first demand is to cut wages.

We must have in mind that the statement that reduced wages mean reduced purchasing power is only partially true. Whether reduced wages mean reduced purchasing power or not depends entirely upon prices. If wages are reduced, and prices remain on the same level, then, or as long as such condition persists, there is reduced purchasing power. There is no diminution of purchasing power if both reductions are in like proportion.

Usually living costs drop faster than reduction in pay during a depression and living costs rise faster than increase in pay during prosperous times. To illustrate: The drop in living costs since the beginning of the recent depression was in excess of the average reduction in wages, according to a survey of the National Industrial Conference Board. The figures revealed by the board show that living costs for wage earners declined 20.7 per cent from October, 1929, to February, 1932, but that salary rates dropped 15 to 20 per cent, and the wage rate declined 13 per cent.

*The Rise and Fall of Profits.* Another popular theory advanced to explain the business cycle is the natural rise and fall of profits. This theory recognizes that certain forces naturally work together to cause a decline in profits toward the end of a period of prosperity, thus bringing about the crisis that ends it. Certain of these factors, such as increased wages, capital costs, inefficiency, etc., were discussed earlier. In the same way we saw that during a depression certain favorable factors were at work causing profits to increase and bring about a recovery. This natural rise and fall of profits is considered by many to be the dominating influence in the business cycle.

**Pessimism and Optimism.** Succeeding waves of pessimism and optimism are offered by some economists as explanation for the

rise and fall in business activity. This has been explained in Chapter II, page 51.

Business recovery is largely a matter of the recovery of individual business units. These units multiplied will mean mass recovery. As fast as individual business gets its house in order, basically right with the economic conditions of today, it can go on to new prosperity with the proper use of advertising. In this manner unit by unit, business recovery will come, and when it does come, it will be sounder than it was before. Those concerns who get their houses in order most quickly will be the leaders in the new prosperity.

**Suggested Remedies to Eliminate or Lessen the Evils of the Business Cycle.** *Increased Knowledge of Business Conditions.* One of the first essentials in eliminating the business cycle and the evils that it causes is a more accurate knowledge of our industrial system and the way it works. Only by understanding the relationship of business conditions and the forces that cause such periodic disturbances can we learn how to control them. Business study and research and a more accurate forecasting of the trends in business activity will, it is believed, enable business and industrial leaders to regulate production, prices, etc., so that there will be no such violent fluctuations.

*Long-range Planning.* Long-range planning of production, both in the fields of public and private works and also in individual industries, is suggested as one means of evening up business activity and preventing periods of extreme prosperity and depression. Large public improvements contemplated by the government should be planned years in advance so that they can be carried on during years when normal business activity is at a low ebb. In this way, labor and capital will be put to work at a time when it is least in demand for ordinary private enterprise. The results will be beneficial to general business conditions, and will permit public enterprise to be carried on at lower costs than if the government launched them at a period of high prices, when it must compete with private enterprise for money and men. In the same way private enterprise, public utilities, etc., could by long-time planning help to counteract the effect of declining business as well as carry on their own improvements more economically.

Production schedules should also be planned on a long-time basis. It is economically undesirable and politically impossible to control prices as long as supplies fluctuate and the demand is uncertain. The principles of scientific planning should be applied to the textile and wearing apparel trades as far as possible. If planning on a scientific basis and an orderly development of our resources, our production, and our distribution were brought about, depressions and famines would be reduced to a minimum. In the past we have had a haphazard and unbalanced control of all forms of industry — production and distribution — particularly in the wearing apparel industries.

*Control of Credit and Prices.* Control of credit by the Federal Reserve banks and other financial institutions in such a way as to prevent over-development of business in times of prosperity and to encourage business enterprise in times of depression is also urged as a means of mitigating the evils of the business cycle. Such control can be exercised to a large degree through the raising or lowering of the rate of discount. To illustrate: In times of depression, when much capital equipment is idle and when labor is only partially employed, a policy of easy money, through its stimulating effect on prices, would tend to lead to increased utilization of equipment and of labor, and hence to enlarged production. An "easy money" policy under such conditions is, therefore, to be pronounced good. On the other hand, when the slack has been taken up and when available equipment and labor are fully employed, "easy money" means simply competitive bidding for a share of these available essentials of production with no possibility of a profitable increase of output.

On such a basis we could properly differentiate between credit expansion and inflation on the one hand and between contraction and deflation on the other. In times of depression, when equipment is largely idle and much labor is unemployed, expansion of credit, which may effectively stimulate prices and thus bring about increased employment of equipment and labor with a corresponding enlargement of output, is to be regarded as normal and healthy. Such expansion should not be called inflation.

Buying power may also be produced by currency inflation, but it will last only as long as the inflation process is kept up. When

inflation ceases, the buying power created by it will cease, business will fall off, and prices will come down even more quickly than ever.

Permanent prosperity is dependent on sustained buying power, which in turn rests on confidence, the desire to purchase, and the flow of money. The latter is the product of the amount of money and its rate of turnover. Neither the amount of money nor its rate of turnover taken alone is of importance. It is the product of the two factors that provides the power to purchase.

We may compare purchasing power to water power by substituting the quantity of water and its velocity for money and its rate of turnover. We know that a vast river with a sluggish flow may have even less power than a small stream with a swift current. Therefore, there was and is no need to increase our gold supply or even credit supply or any other form of money to build up purchasing power. In fact, we could do very well with much less money than we now have if we circulated it or turned it over with sufficient rapidity. On the other hand, an infinite supply of money or credit with no circulation is useless as far as buying power is concerned. It is like a waveless, tideless ocean — worthless for power generation.

The impulse to circulate money is prompted by the desire to obtain useful goods and services, or by the desire to increase one's supply of money. In times of depression there is a vast number of people with the desire to purchase goods, but they lack money. No one wants to lend it to them without security, nor are we willing to give it except in relatively small amounts.

Depression continues as long as commodity prices continue to drop. Unless this process is reversed, there can be no recovery. This is quite evident. If a mill has to accept only sixty cents for each dollar it formerly received, it must get into difficulties. The mill owner can not reduce production costs as drastically; he can not greatly lower wages; interest and taxes he can not lower at all. Prosperity can not come unless business becomes profitable.

Low prices are especially hard on mills or corporations that owe money on bonds or mortgages. When they borrowed, the dollar had a certain purchasing power; later its purchasing value may be fifty per cent higher, or more. To meet payments they must now

deliver 3000 pounds of wool instead of the 1000 pounds necessary in 1923-1928 ; 300 bales of cotton instead of 100 ; and so on. They can not do it.

A currency should be stabilized just as the yard is stabilized for length and the ton for weight. A dollar's purchasing power can, within satisfactory limits, be regulated by increasing the credit basis on which its value depends. The purchase of \$400,000,000 of government bonds by the Federal Reserve in 1922 promptly turned prices upward and started recovery.

The credit base of the United States consists in part of gold and in part of government bonds, rediscounts, and bills. Its amount can be increased by simply buying more bonds — without in any way departing from the gold standard. If the Federal Reserve were to buy \$5,000,000 of government bonds, the checks given in payment would immediately increase buying power.

*Government Interference.* Business men feel that the government should as far as possible leave industry alone. There is no place in the present economic order of the United States for a super-national industrial planning commission. Under our system we must continue to depend on private interest and competition under law and government supervision to give direction to our national industrial development. Of course in times of depression the governments are obliged to interfere.

One of the leading cotton men in Texas gave voice recently to plain facts, showing the costly failure of the United States government's interference with the marketing of the country's greatest textile staple, and to a demand that the government retire from the cotton business.

The extraordinary action of a national wool-marketing organization in selecting outlets for the dumping of mohair at a very low price and upsetting carpet wool values and sales prospects has aroused merited resentment. The fallacy of spending money and time in hundreds of trade associations whose operations are limited so long as hampering interpretations of the Sherman law hobble business and delay an intelligent "trust law" revision is finally stirring business men to move against prolonging policies of "fiddling legislation" when business men only ask the removal of unfair restrictions on their legitimate activities. In 1932 they witnessed

the normal effect of Japan's attempt to regulate the production and sale of raw silk in a price decline unequaled in the history of textile raw materials.

On April 25, 1932, the Japanese government ended an unlucky experiment in state control of the price of basic products by selling 107,380 bales of raw silk to the Silk Association of America. The deal is the largest and the price the lowest ever recorded here. The exact price paid is not disclosed, but it is understood to be between 430 and 440 yen a bale. When the experiment began, the price approximated 1000 yen a bale, so that the government agency was involved to the extent of more than 100,000,000 yen (\$32,500,000 at the existing exchange) and shows a loss on the entire transaction of about 60,000,000 yen (\$19,500,000).

Textile producers and traders who have suffered unduly for many years from governmental interference with the operation of natural business laws are beginning to find hope in the rising tide of popular wrath provoked by many abuses.

Despite the views of many successful business leaders and statesmen that government interference is not effective in business in the last analysis, it was necessary for Congress in 1933 to pass a National Industry Recovery Act for a threefold purpose: (1) to create employment, (2) to raise wages, and (3) to eradicate the irregular and cut-throat competitive practices of business which were aggravated by the economic demoralization of the depression during the years 1930-1932. This Act did not contemplate the fixing of prices and wages by governmental decree nor the unionization of labor by Federal command, nor the setting up of industrial czars for different trades. It is an attempt to stabilize industry by checking and controlling permanently the disintegrating forces of the depression of 1929-1932, and to work out a better social order between the manufacturers, selling agencies, workers, and the consumers.

The government encouraged the most successful manufacturers and their workers, with the consumers and the public, to work out satisfactory schemes called "codes." One of the first and most highly developed codes was that prepared by the cotton industry.

*The Coöperation of Business.* Outside of the trade-mark or branded textiles there is open competition in the manufacture and

sale of wearing apparel. European countries have more of a monopolistic system, while we have the competitive idea.

Many thoughtful citizens and others feel that unbridled competition and individual freedom have failed lamentably to insure the well-being of individuals or the masses. The plain truth of the matter is that the old unbridled competitive system broke down in 1930-1932, not only in this country but throughout the world. No one who has given much thought to the subject believes that this system can be restored on anything like the old lines. The question today is how to meet the emergency created by the breakdown of the old system.

In times of depression like 1932, cut-throat competition took place in wearing apparel, such as threatened the existence of the industry by insolvency. Certain leaders decided on an informal program of coöperation so as to check production and secure prices that would give a fair profit. The Department of Justice acted under the Sherman Anti-Trust Law in declaring that coöperation toward restricting production and maintaining prices was illegal. Hence, it will be necessary to have the government modify the Anti-Trust Law before the wearing apparel industry may restrict production and maintain a price that will give employment and a wage that will provide consumer purchasing power. For we all realize that unless the profits of industry are widely distributed, the purchasing power will not be maintained at average, and hence the production facilities will be handicapped by not disposing of their product.

On the other hand, there are those who feel that our recent depression was not due alone to the open competitive system, but to the great selfishness and ignorance of many of our leaders of production. On the one side stands liberty with hundreds of years of splendid achievement to its credit, and on the other side stand its critics and its enemies, urging the substitution for it of compulsion in some one of compulsion's various forms. These include, of course, doctrinaire socialism, communism, and despotism.

Our society, which long rested upon a basis which was almost exclusively one of competition, has now passed over to a basis which is essentially one of coöperation. This is as true of men as it is of

nations. *Laissez-faire* has had its day and has served its purpose. We have not yet readjusted our modes of thinking and our legal theories and our political axioms to these new conditions.

It is hoped that our latest depression has developed a new type of business man, who will feel his position to be one of trust and who will assume his duties with a feeling of coöperation and responsibility, not only to himself and his trade, but also to society and the consumer.

The welfare of any community, state, or government depends upon the closest coöperation and the best feeling between capital, labor, and the public. Any hostility or suspicion that ends in a strike is costly to the manufacturer whose plant is idle, and he loses profits; the laborer's family suffers loss of wages, and the public the loss of services and goods. Sometimes personal violence ending in death and destruction of property takes place.

There are methods of settling differences between manufacturers and labor, the same as there are methods for settling differences between different manufacturers. The following shows the methods adapted by different trade organizations with regard to ending differences.

Textile trade organizations have attempted since the depression to better trade conditions and also to develop arbitration committees. In addition the trade organizations hope to utilize existing data of research and statistics.

The very heart of any program for betterment is the use of current, or very recent, operating experiences as the basis for calculating immediate trends in the textile markets. The following methods are suggested for the improvement of conditions:

(a) The preservation and expansion of the Federal Census Bureau's present reports on consumption, active and idle machinery, garment cutting, and other current operations.

(b) Interpretative work dealing with these figures, other basic data, and special compilations gathered from time to time should be undertaken for the industries (and financed by them) by such institutions as the Industrial Research Bureau of the University of Pennsylvania, the Bureau of Business Research of Harvard University, and other similar institutions prepared to do work of this sort.

(c) Inter-association projects might well be undertaken jointly by the National Association of Manufacturers working with the Garment Association, the National Retail Dry Goods Association, and, when occasion arises, with the manufacturers of other fibers, to end some of the more disturbing causes of confusion in textile distribution.

(d) Either through the National Association of Manufacturers, or independently, there should be formed specialized economic councils for the fabric industries to consider ways to bring about improvement of underlying conditions. These economic councils should have as advisory members two or three men from outside the industry, representing the law or the public, or both, who would discuss all projects from a social point of view.

(e) Coöperation with the United States Institute for Textile Research is suggested as a means of accomplishing some of the foregoing ends as well as for furthering research in technical fields.

(f) Existing bureaus and services designed to help in the solution of style problems should be encouraged and perfected.

(g) Mills and selling houses which do not now have an adequate or properly manned statistical staff should be encouraged to develop one. They can be made to more than pay their way, and no betterment of a lasting sort can be expected without adequate individual equipment.

(h) The development of a keener statistical sense on the part of many millmen is suggested as a desirable aid to improvement.

Thus equipped with statistical background, the responsibility falls on individual concerns to use the underlying figures and the factual records of their own current sales to project plans for a safe distance ahead of any given time.

Disagreements and questions should be settled by committees of arbitrators composed of interested representatives and a neutral member. The following controversies over raw silk, thrown silk, and broad silk have been settled by arbitration by the Silk Association of America, Inc., whose arbitration facilities made possible the amicable settlement of the controversies covered.

A broad silk manufacturer claimed that the China raw silk delivered against a letter of credit contract calling for Extra A grade was not of the required percentage of evenness for that grade, and he asked reimbursement of \$7000, this being the difference in value of the quality delivered

and the quality he claimed he should have received. He stated that immediately upon discovering the inferior grade he requested replacement, which was refused. He admitted, however, that the silk had not been tested until two months after delivery. The raw silk dealer contended that the silk delivered was of the quality called for in the contract, no percentage of evenness having been stipulated. He claimed that if the silk were inferior he should have been given the opportunity to make replacement within the 15 days provided for in the Raw Silk Rules of the Silk Association of America, Inc., which were part of the contract. After consideration of the evidence it was pointed out that there was no stipulated percentage of evenness for China silks and that the chops delivered were standard chops for Extra A silk. The arbitrators decided that the silk delivered was of the quality called for in the contract and that the broad silk manufacturer was not entitled to any damages.

**Social Effects of the Business Cycle.** Any sudden change in the price level, whether it is up or down, naturally brings hardship to certain groups of individuals and enterprises. Because wages tend to lag behind other prices in the upward course of prosperity, labor does not immediately feel the benefits of good times. Of course, regularity of employment tends to counteract this effect, and during the later stages of a boom wages tend to catch up with prices. After the crisis and during the deflation period wages tend to drop slowly. Hence the real wages of the worker may be higher for a time. But unemployment increases rapidly and reduces standards of living, and actual privation is the lot of many workers. Labor is thus the chief victim of the business cycle.

Business men and entrepreneurs reap great profits during the boom period of the cycle, but the casualties among business enterprises are numerous during the depression period. A stabilization of business activity would offer greater opportunities for regular profits and income, even if the easy profits of the boom period were eliminated.

The effect of the business cycle on creditors and debtors is extreme. Thus a man borrowing \$1000 when prices are low, and forced to repay it when prices have risen greatly, gives back much less in purchasing power than he received. The creditor in this case receives much less in actual purchasing power than he gave when he loaned the money. These inequalities work much hardship and make it impossible to feel sure of future conditions.

The purchasing power of fixed incomes varies greatly during the various stages of the business cycle. Thus a person receiving such an income has a larger purchasing power when prices are low and a greatly diminished purchasing income when prices rise.

Our American general price-level, including retail prices, rents, and wages, as well as wholesale prices, fell about 24 per cent between 1929 and 1932. In other words, our American gold dollar would buy about 33 per cent more on the average in 1932 than it did in 1929. Falling prices depress business and cause unemployment.

They impose continually increasing burdens upon the debtor class: upon the home buyer and the farmer who are struggling to pay off mortgages on their property; upon governmental bodies national, state, and local, and large public utilities and industrial corporations, with their heavy bond obligations. Debts, unfortunately, do not decline in volume as income fades away, or as the value of the dollar in which they are payable increases.

**Crime and Suffering.** One of the great causes of crime is the economic cause. Statistics show that the so-called "hard times" have always increased the number of criminals in a community. Enforced idleness, due to depression in industries and business, causes starvation, which leads to begging and stealing. Society must provide agencies to respond quickly with temporary relief during the periods of unemployment which occur with varying degrees of frequency and intensity, or else expect increase in crime.

**Emergence of Small Business.** One striking feature of the recent troubled business period has been the emergence of small business. There were more new companies formed in New York State during January, 1932, than in any other month of the depression except March, 1931. It is interesting to note that many of these small new firms were organized by men who had been thrown out of employment by the larger companies.

Most of the larger concerns were in an awkward position during the depression and were facing a unique economic situation. Enormous plant capacities, developed to meet the artificial markets created by high-pressure merchandising methods, were out of keeping with the normal requirements of supply and demand. The effort to keep the demand inflated to the pitch set by the ability

to supply the purchasing power was reaching its limits. It was recognized that normally the market could not absorb all that could be turned out by mass-production methods. The idea of installment buying was cleverly sold to the public so thoroughly that, for a time at least, general business enjoyed what appeared to be a period of real prosperity.

With the smaller concern, demand controls the supply. There is no temptation to increase the supply beyond the requirements of the immediate market. Because of the inability of the larger organizations to adjust themselves quickly to rapidly changing conditions, and because the smaller concern can profitably sell its products at a lower price in these times, it is certain to be an important factor in the process of business recovery. Especially important is the smaller concern because it thrives on ideas and inventions.

**Elimination of Inefficient Business Units.** One of the favorable aspects of the business cycle is that it tends to eliminate inefficient units of production. While this may be a desirable end, it would seem that such control could be achieved by less disastrous methods. The great mortality of business enterprises because of failures and bankruptcy is at best an uneconomic and wasteful process.

A careful study of business failures shows that the majority of men who go into business fail. This is particularly true in regard to the textile and clothing trades. Most of the men in the clothing business ought to be working for some one else.

During the years 1931 and 1932, more failures took place in the textile and cutting-up trade than in any other industry. In 1931, the National Credit Office found 1057 firms, with liabilities of \$40,939,000, forced out of business. The depression naturally forced out the inefficient units.

A study of the failures or insolvencies during the depression of 1932 shows, according to the research department of the National Credit Office, that a total of 382 firms, involving liabilities of \$17,029,000, were forced out of business by adverse trade conditions, price instability, failure to adjust operating expenses to meet reduced sales volume, and restriction of sales by credit hazards. Insolvencies were 16 per cent ahead of the last quarter in 1931, and showed a gain of 21 per cent over the previous quarter. There

were 46 per cent more failures in the first three months of 1932 than in the same period of 1931. Liabilities of the failures in the first quarter of 1932 exceeded those in 1931 by 46 per cent.

The most favorable record was that of the manufacturers of dresses and costumes. In this division the number of insolvencies exceeded the number of the first quarter of 1931 by only 12 per cent, while the increase in liabilities was 14 per cent. The number of first quarter failures was 33 per cent under the number reported in the final quarter of 1931, while liabilities of the final period were under those of the last three months of 1931 by 15 per cent. This showing is in sharp contrast to that of the other divisions, because of the small increase over the first quarter of 1932 and substantial drop from the totals of the last quarter of 1931.

In the miscellaneous silk division, failures numbered 20 per cent more than in the first quarter of 1931, while liabilities were 25 per cent greater. The comparison with the final quarter of 1931 shows an increase of 18 per cent in number and 14 per cent in liabilities.

There were 56 failures among wholesalers of dry goods and knit goods in the first quarter. The liabilities involved were \$3,522,000. This number was 47 per cent higher than the number in the same quarter of 1931 and 211 per cent higher than the number reported for the last quarter of 1931. The liabilities were 60 per cent above those of the first quarter of 1931 and 260 per cent greater than those of the last quarter.

The cotton goods division of the textile industry showed the largest gain in comparison with the first quarter of 1931. The number of cotton goods failures was 94 per cent higher than the number in 1932. The failure level in this group was also well above that of the last quarter of 1931, with gains of 51 per cent and 18 per cent respectively in number and liabilities.

Manufacturers of coats and suits failed to the number of 53. This was 61 per cent more than failed in the first quarter of 1931, but it is exactly the same number as failed in the last quarter of 1932. The liabilities of these failures at \$1,386,000 were 41 per cent higher than the liabilities of the first three months of 1931. The comparison with the liabilities total of the final quarter of 1932 is far more encouraging since it shows a decrease of about 20 per cent.

There were 60 per cent more insolvencies among the manufacturers of clothing in the first quarter of 1933 than in the first quarter of 1932. The gain in liabilities was 40 per cent. In this group, also, the liability comparison with the final quarter of 1931 was more favorable. Although the increase in number was 60 per cent — the same as that between the two first quarters — the liabilities of the first quarter of 1933 were only 8 per cent above those of the last quarter of 1932.

In the analysis of these failures the fact showed clearly that many concerns had not adequately adjusted operating expenses, such as rentals and leaseholds, to meet reduced sales volume. In a number of cases, of course, rentals could not be readjusted. Expenses disproportionate to gross profits or out of line with working capital result in an excess of cost outlay over sales income.

There were a number of instances of sales restricted because of credit hazards without regard to sales volume. Few failures were due to an overbuying or overstocked condition. The steady downward trend in the prices of a number of major commodities caused losses beyond the control even of conservative operators.

Figures for the first quarter follow :

Manufacturers of coats and suits, 53, \$1,397,000; clothing manufacturers, 56, \$3,754,000; dresses and costumes, 55, \$2,105,000; dry goods and knit goods wholesalers, 56, \$3,522,000; miscellaneous cotton, 91, \$4,112,000; miscellaneous silk, 71, \$3,150,000.

Following are the records for 1931 by quarters :

Coats and suits — First, 33, \$975,000; second, 36, \$941,000; third, 20, \$504,000; fourth, 53, \$1,733,000; total, 142, \$4,153,000. Failures totaled 11.3 per cent of the entire industry.

Clothing — First, 35, \$1,890,000; second, 24, \$827,000; third, 33, \$1,730,000; fourth, 61, \$2,555,000; total, 153, \$7,002,000, or 8 per cent of industry.

Dresses and costumes — First, 49, \$1,841,000; second, 56, \$2,590,000; total, 259, \$10,257,000, or 12.4 per cent.

Dry goods and knit goods — First, 38, \$2,205,000; second, 18, \$657,000; third, 13, \$781,000; fourth, 18, \$980,000; total, 90, \$4,623,000, or 3.4 per cent.

Miscellaneous cotton — First, 47, \$2,247,000; second, 41, \$3,897,000; third, 38, \$3,628,000; fourth, 60, \$3,460,000; total, 186, \$13,232,000, or 2.9 per cent.

Miscellaneous silk — First, 59, \$2,514,000; second, 60, \$3,474,000; third, 48, \$2,923,000; fourth, 60, \$2,761,000; total, 227, \$11,672,000, or 4.5 per cent.

Business failures occur at an unusually high rate during the times of depression and for some time afterwards, even though a trade upturn may be initiated during that period. Creditors may be showing a certain amount of tolerance, due to the fact that times are regarded as bad, but they will immediately demand debt settlements as soon as industrial conditions start to move forward. Consequently, a business revival will be accompanied by a steady flood of suspensions.

In an effort to aid during depression, credit associations are suggesting that three practices be followed in the extension of credit. First, where any community is financially embarrassed by a natural calamity, such as drought, a flood, etc., it is advised that creditors be lenient and extend a measure of helpfulness. Second, when customers are affected adversely by bank failures, credit men are asked not to press them nor penalize them for something which is beyond their control. Third, when the debtor is a man who has had an enviable record in the past, has been in business for some years, is distinguished by character and capacity, and is helpful to his community, moderate forbearance on the question of debt payments is also advocated.

Credit men, however, are being warned against selling terms instead of goods. Many manufacturers and wholesalers are so eager to move merchandise that they specify payments within six to eight months. While no doubt a reasonable leniency as to terms may be desirable in especial instances, too rapid an inflation of commercial credit through selling terms is dangerous.

The large number of failures among manufacturers may be traced to the heavy write-offs in inventory values during the years of depression. Many producers who in boom times segregated their stocks carefully and gave the proper valuation to slow-moving or practically unsalable items attempted to place a disproportionately high value on such numbers at the close of 1932, in order to improve their statements. Consequently, creditors who were aware of the situation refused to be tolerant and pressed for settlement of their claims.

The textile and clothing trades have many more failures than any other lines and many of the firms that fail offer unsatisfactory settlements. Credit men are determined to destroy the technique developed by traders who have been implicated in suspicious bankruptcies and are planning to hire expert investigators to look into all receiverships and bankruptcies. It is said that many firms which have gone into bankruptcy could have been prosecuted, but that credit men refused to do so because of the time and expense involved. In many cases settlements have been made on the basis of ten cents on the dollar when creditors have felt certain that double that amount could have been paid.

**Mergers.** Even while we find the number of small businesses increasing during a depression, we find a movement toward mergers being carried on by other companies. Thus, while banks have been entering so many mergers, the textile factoring houses of New York have been moving in the same tide. These factors check the customer's credits and discount the sale of a large part of the textile business of the country, so that the concentration of the service in fewer and very strong hands will be a stabilizing influence.

A merger between two rival silk firms was commended in the following terms by an executive of one firm :

We were convinced that customers of both companies could secure better service if the companies were combined and that the cost of serving these customers could be materially reduced. Both companies have adhered to very high standards in the manufacture of their products. Combined, the quality standards can be raised still further through the ability of the combined company to proceed with the installation of certain new equipment and processes which, in our opinion, are superior to anything yet produced. This equipment entails substantial capital investment. It would be economic waste for both companies to make this same investment.

The products of both companies have tremendous consumer acceptance. Each has spent millions of dollars in advertising. Combined, an even more effective job of promotion could be undertaken. The management of both companies, after many discussions, are substantially in agreement. But there are many phases of the merger which must yet be worked out.

In the meantime, customers of both companies can feel assured that not only will every phase of each company's operations continue as

before, but that the planned move will result in decided improvements to them in service, in quality, and in economical distribution. The major lines of each company will be retained, the only significant change will be the results of endeavors to make still better products.

**Undesirable Trade Practices.** Because of the intense competition that arises during a period of depression we find many undesirable trade practices appearing at such times. One of the most serious problems of the wearing apparel industry is the policy of cutting prices. In times of depression or bad times, the business man finds it difficult to sell, and is often obliged to sell at a loss in order to keep his factory or mill going and give the employees sufficient to keep life together.

At times cotton textile manufacturers have been selling certain fabrics at prices below cost on account of excessive stocks. Under depression conditions, it is understandable that a mill would be willing to dispose of its products at a figure which would represent "breaking even," or at worst, a slight loss, but it seems unbelievable that a mill should be ready to contract its output for months ahead at quotations which represent a loss of one-fourth cent to one cent a yard on every piece of goods turned out.

Curtailment is the first-hand solution, but the problem is not as easy as that. A difficult factor is the one-mill village, the small community, usually in the South, where the entire business and social life revolves about its textile plant. The owner often knows all of his employees personally, and his interests extend to the town's retail and banking business. In other communities the mills own or control these banks and stores. Prosperity or hardship and deprivation rise and fall with the town's one mill.

These conditions create a trying problem for the manufacturer. To get the limited business available, he must take prices that are below cost; he has duties to his directors and stockholders, and he also faces the risk of dissipating the corporation's assets if he accepts an offer. At the same time he is bound by emotional ties to his community and often receives direct appeals from families in distress.

Until recently many millmen could console themselves with the knowledge that the overhead cost of a closed plant was as large as losses entailed by partial operation.

An intelligent control of production will mean more work at better wages, but this will not make any easier the position of the man owning the one mill in the village, called upon to explain economic principles to a delegation of workers whom he has known and worked with all his life. This may explain one reason why curtailment, which seems to be such a simple and obvious solution to the disinterested person, is difficult to put into practice in the textile industry.

Capital and the production industries are beginning to understand that price-cutting is a menace to prosperity because it strikes at its very heart,—fair profits,—out of which wages, dividends, and consuming power can be maintained and increased. Without this foundation of profit there can be no constant employment. When competition succeeds, not by means of lowering costs, but by reduced prices which are uneconomic and profitless, we force an artificial decline in commodity prices. This, as economists inform us, leads to a vicious circle, with lowered buying power.

Reduction in the quality of product is also a common practice during a depression. In textiles, almost immediately in previous depressions, virtually everybody began making and selling cheap goods, which were wholly without character and were made to sell at whatever price the public could pay.

During the depression of 1932 the output of the average textile producer maintained its regular standard of character in very high degree, although the prices at which textiles were offered to the public sank far below the level at which the producers could get a new dollar for an old one.

Accordingly financial loss to the textile manufacturer naturally resulted. Economies which he made possible were heedlessly passed on to an unappreciative general public by cutters-up, jobbers, and retailers, so that in 1932 the position of the textile manufacturer was more difficult than at the beginning of the depression. As a consequence, materials and merchandise of poor quality began to reach the buying public and protests began to arise.

It is admitted that during the last generation the appreciation of quality has diminished. The public has been misled into substituting appearance for quality. If the merchandise made a good

appearance as to style, color, etc., and as to price, it was readily accepted by the public. This attitude has opened wide to cutters-up and retailers the avenues of substitution and to textile manufacturers the ways of manipulation.

**Depressions in Special Industries.** Depressions in single industries frequently have their source in causes not directly connected with the business cycle. Thus many industries, notably in the clothing and wearing apparel field, have suffered from seasonal unemployment, that is, the employment of workers during only a portion of the year. Such periods of slack business activity were formerly considered to be a necessary evil, but research and study in recent years have indicated that by proper planning of industrial schedules much may be done to iron out irregularities due to seasonal products. The dovetailing of two kinds of production, advertising, manufacturing stock in dull periods, etc., have been found helpful in stabilizing business activity in such industries.

In the clothing industry many cases of distress in special branches of production may be traced to changes of fashion. Fashions or changes of style in wearing apparel are naturally frequent. Consumers and others, in making these changes, should give sufficient time for the change for the different trades affected to make adjustments so they will be able to pass from one line of wearing apparel to another without too great financial loss. In the past, tragic tales are told of how certain trades and industries were wiped out of existence in a few months without sufficient time to change to another line. To illustrate: When the styles a few years ago were in favor of slimmer silhouettes, the petticoat trade was practically eliminated. The same was true with the hair-pin industry when bobbed hair became popular, and also with the feather trade in 1918. But the trades revive again when the cycle of fashion returns, as in the demand for feathers in 1931. Then overnight the 15 members of the feather trades were increased to 300. The effect is more noticeable in the ostrich trade. In 1912 there were a million ostriches in Africa, yielding feathers to decorate hats. Then when the fashion of feathers declined in popularity, the number was reduced to 10,000. In 1931 the 10,000 were unable to meet the demand. Then adulterations were practiced and feathers of all

kinds are used, dyed and colored in an artificial manner, to meet the needs of the styles.

In times of depression it becomes necessary for industries to merge, consolidate, and attempt to cover a wider rather than a narrow field of wearing apparel. This is shown in the condition of a ribbon mill during the depression. In the textile trade nearly every one knows that the ribbon industry is uncertain, and that the world's greatest flow of ribbons is turned out by one plant, which has built up an important enterprise from a small beginning in 1878.

With the annual capacity of between 110,000,000 and 115,000,000 yards, and facilities for manufacturing every known type and quality of ribbon, the company has far outstripped any similar enterprise and is selling more ribbon to the retail trade than all other concerns combined.

Products of the corporation are used by some twenty different branches of industry, including the blanket, candy, suspender, badge, florist, ladies' wearing apparel, corset and underwear, men's hat, shoe, garter, greeting card, infant's wear and cap, novelties, tobacco, baking, interior decorating, linen, handkerchief, and stationery trades.

**Efficiency Methods.** In times of depression production costs must be cut. One of the most successful means of accomplishing this is by the adoption of so-called efficiency methods.

The efficiency system, designed primarily to reduce production costs, applies chiefly to the weave room in a mill but has been extended to other departments. It varies widely in different mills and is not new. It has been successfully used by many mills for a number of years without friction. Briefly the system makes the weaver a highly skilled worker, giving skilled work to skilled workers and less skilled work to less skilled workers. It relieves weavers of all duties except the actual operation of looms, and makes it possible for them to handle a greater number of looms, thereby producing more cloth and earning more money under the piece-rate system.

This system of operation is being successfully carried out by many Southern mills with the approval rather than the resentment of the workers. One large group of mills reports that its weavers earn 20 per cent more than formerly. An engineering company

which has installed the system in a large number of Southern plants asserts that without exception these companies are paying increased wages for increased work.

**The Wool Industry.** Changes in styles to follow the general movement of less bulk in wearing apparel have curtailed to a considerable extent the use of wool and cotton fabrics.

The year 1909 represented one of the most prosperous years in textiles in the United States, particularly in the woolen and worsted trade. At that time there were produced  $6\frac{1}{4}$  square yards of women's woolen and worsted dress goods per person in the country (spoken of as per capita). Changes in style of women's wearing apparel have caused the quantity per capita to become smaller and smaller, until in 1929 the total production amounted to a trifle more than one square yard per capita. After 1929, a slow movement began toward woolens in place of silk. In 1931 there appeared a fashion trend toward woolen, which created a better demand for wool. The spring and summer of 1931 saw the development of light-weight woolen dress goods that for style, lightness, and beauty surpassed anything ever before attempted.

This increased interest in the use of woolens has been due to a campaign of several years by wool trades to advertise the merits of woolen products by a systematic advertising scheme:

1. The wool industry has every year a wool week in which meetings are held discussing the merits of woolen and worsted fabrics.

2. Fashion shows have been held at hotels, stores, etc., showing the artistic value of woolen and worsted fabrics.

3. In addition to the women's wear part of the business the wool trade is also aiming to dress up the men of the country. By suggestion and appeal it is possible for men to "perk up" in their dress.

Adverse conditions in the wool market are not entirely due to the depression, as certain of the underlying factors had been becoming cumulatively worse for many years. Flocks of sheep which were seriously depleted during the War have been steadily increased throughout the world during the past decade, and there has been a corresponding expansion in the annual wool clip. The total number of sheep in all important wool-producing countries, except Russia, was 21 per cent larger in 1931 than in 1923-1925,

while world wool production in 1931 showed an increase of 25 per cent over the average clip in the years 1923–1925. Estimates indicated a slight decrease in United States clips in 1932, owing to unfavorable weather on the ranges, but world supplies of wool are more likely to increase than decline.

A number of factors may be materially improved. Cancellations, hand-to-mouth buying, deferred ordering, uncertainties of style and fashion trends, instability of color standards, price demoralization, design piracy, unnecessary three-shift operation, faulty costing — these and many others are the pressing problems of the industry.

**The Silk Industry.** The silk industry has passed through various stages of development as regards prosperity and depression. These fluctuations have been due in large measure to irregular production because of varying weather conditions and lack of proper care for the silkworms.

The silk dress goods industry of the United States began in 1909 to enter upon a great era of expansion. It increased and decreased at various times, until about 1929 there began a movement in style tendencies toward woolen dresses instead of silk. Silk exhibitions and campaigns to arouse greater interest and more appreciation of silk fabrics have done much to bring silk back into favor.

From 1870 to 1890 the value of the silk industry's product in this country increased from \$12,000,000 to \$87,000,000. Relatively speaking, this branch made greater progress than any other in the textile industry. However, silks experienced an acute depression in 1890–1891, as did general business.

The production of broad silks in the United States in 1870 was approximately 1,000,000 yards. It is interesting to compare this with the nearly 600,000,000 yards produced in 1929.

Between 1914 and 1925 the value of silk goods manufactured in America increased 218 per cent as compared with 158 per cent and 159 per cent respectively for woolens and cottons.

The best raw silk varies considerably in price, due to rapidly changing market conditions. Double extra cracks or best grade ran up to \$17 a pound after the World War and is seldom to be had at the old levels of \$4.50 to \$6.00 a pound, which range of prices held for nearly 100 years. While such violent fluctuations as those

obtaining in 1919 and 1920 are unusual, many other elements affect prices. These may be abnormal weather conditions, such as a very wet or a very hot season, or epidemics of diseases to which silkworms are subject. The terrible disaster in the shape of earthquake, fire, and tidal wave that overtook Japan in 1923 further unsettled the market, as not only was a great quantity of raw silk destroyed, but the transportation, conditioning, testing, and storage of raw silk was greatly impeded.

During 1931, for the third year in succession, the silk market was most disappointing. Silk was worth, in 1932, in gold, one-half of what it was worth at the beginning of 1930, and only one-tenth of what it was worth at the highest in 1920. Neither cotton nor wool has fallen in value to the same extent. No one could foresee, or even conceive, that silk could be sold as cheap as it is now.

The drop in the price of silk has affected many silk manufacturers, as shown in the following reports. Raw silk, which commanded a level of about \$5 a pound in January, 1930, dropped to \$2.25 by the end of the year, which necessitated considerable adjustment of inventories. One firm in hosiery reported a deficit of \$559,000 in that year, compared with a profit of \$1,804,619 in 1929. Although some improvement in earnings took place in the following year, silk prices slumped still further.

An unfavorable reaction from the buying public in the matter of over-weighted, sometimes called par-weighted, silk is slowly but surely leading to a popular demand for pure dye fabrics. Much has been made of the desirability of par-weighted silks. When the weighting process results in an honest restoration of the weight of the silk lost through the boil-off process, the silks fulfill all expectations in the matter of wear, but too many sellers are using the term par-weighted indiscriminately.

In the mad rush to achieve price, over-weighted silk piece goods and ready-to-wear garments have been sold in huge quantities. As a result, a renewed demand from the consumer for pure dye fabrics is already making itself felt.

**The Cotton Industry.** Cotton fabrics have always been popular because they are cheap, durable, and washable. But with changes in styles toward lighter and less clothing, particularly underclothing, cotton has suffered. Then again, since women have entered

business they demand fabrics of better design, that can be easily washed, and that are more stylish in appearance, especially in hosiery. Silk and rayon became great competitors of cotton. Then again, during the years 1929–1931 weather was favorable to the growth of cotton, and this condition, plus additional use of fertilizers, gave the country excessive over-production. This caused a decline. But through campaigns of advertising by the Cotton Institute, as described on pages 620, 621, cotton in 1932 came back at the expense of silk and rayon.

For eight years prior to 1930, the average annual domestic market for woven cotton goods was 7,554,000,000 square yards. In each of three years, 1923, 1927, and 1929, it exceeded 8,000,000,000 square yards. During this entire period only one year fell below 7,250,000,000 square yards, which is slightly under the ten-year average of 7,293,164,000 square yards. In percentage relationship, 1930 consumption was 84.7 per cent of this average and 1931 reached 86.64 per cent.

The number of customers naturally increases with the rise in population. Excepting radical changes in custom, which have not been of special significance during this period, gain in consumption depends on purchasing power as well as on the number of consumers. Since 1929, disturbed economic conditions have brought about a severe contraction in general income, which has been reflected in a reduction of the per capita consumption of woven cotton cloth from an average of 65.3 yards in 1922–1929 to less than 51 yards for each of the years 1930 and 1931. The ten-year average is 62.19 square yards.

The textile wants of 125 million people are greater than those of 110 million were ten years ago. Any reasonable economic improvement should bring the per capita consumption up to the ten-year average. This would mean an annual domestic market of 7,773,750,000 square yards and, with average exports added, about 8,181,903,000 square yards. The making of such a yardage would require 95,693,653,000 spindle hours of 3015 hours per year for each of the 31,737,174 spindles now in place.

This survey is a reasonably accurate record of the cotton textile industry during the past decade. Its application to specific classifications of product is not appropriate because the changes both in

consumption and equipment have been irregular with respect to various kinds of goods. The data on plant equipment and its activity includes, necessarily, machinery and its operation in purely spinning mills and in mills whose yarn is used for products other than woven goods over 12 inches in width, such as twine, cordage, tape, knit goods, etc.

**The Rayon Industry.** Sometimes silk fabrics are popular and are in great demand. Then rayon will take the place of silk; at other times worsted or woolens may be popular. One of the strongest competitors of silk has been the recently developed synthetic fiber, rayon.

When rayon was first placed on the market, it was lustrous and was called artificial silk. Later it was called rayon, and certain forms of manufactured rayon were called synthetic fibers. The fabric carried out the military effect of the style tendencies. After a period the military style tendency began to decline, and it was advisable to reduce the luster of rayon. This reduction was continued until in 1931 some of the rayons had as little luster as cotton.

Rayon is being adapted to other uses of wearing apparel, particularly accessories — umbrella cloth to take the place of gloria (silk and wool, silk and cotton). It has also been used for water-proofing.

Rayon, offspring of necessity, is by far the youngest member of the textile family. Unlike cotton, wool, silk, and flax, on which the world has been dependent through the ages, rayon is a product of modern ingenuity. The World War, which compelled Europe to look for substitutes for a great many articles of clothing, gave rayon its real beginning. Since then the growth has been tremendous — first abroad and then on this side of the ocean.

In the past decade the United States has taken the lead by a wide margin in production as well as consumption. In spite of fluctuations of activity in other textile fields, production of rayon yarn established a new high record in 1931, amounting to about 143,900,000 pounds, a gain of more than 30 per cent over the previous year, while consumption of 150,000,000 pounds was about 43 per cent ahead of 1930. In 1933 the production was 207,600,000 pounds.

Rayon producers in the United States during 1931 accounted for approximately 30 per cent of the world's output. This nation was far ahead of its nearest competitor, Italy. Furthermore, domestic consumption composed almost 35 per cent of the world usage. The following tabulation in thousand pounds shows world production and consumption in 1931, the output including viscose and acetate, the principal processes :

<i>Country</i>	<i>Production</i>	<i>Consumption</i>
Belgium.....	10,150	5,148
United Kingdom.....	54,165	48,200
Canada.....	5,600	6,000
Czechoslovakia.....	4,620	14,300
France.....	38,320	18,460
Germany.....	52,000	62,500
Netherlands.....	20,250	2,350
Italy.....	74,000	23,000
Japan.....	47,450	43,000
Poland.....	4,850	4,500
Switzerland.....	9,000	3,200
United States.....	144,350	154,350
Other Countries.....	2,750	55,600
Total.....	467,505	440,608

The rayon industry in this country has had to face the usual problems of price-cutting, which, while not as drastic as in other branches of the business, were nevertheless an important factor in 1931 because of carry-over stocks and prices of other fibers. In the viscose field, responsible for about 85 per cent of the total production at home, producers have made considerable progress toward stabilization. Competition, however, is keen and price unsettlement has caused considerable uncertainty in the current year.

The Industrial Rayon Corporation, by virtue of its low-cost plants, ranks as one of the leading manufacturers of viscose rayon yarn in this country. Its annual capacity is rated at between 13,000,000 and 15,000,000 pounds. The results of this concern in 1931 reflected the increasing competition and price-cutting tactics of principal units. An additional factor contributing to the

relatively poor showing for that year was the liquidation of obsolete products at unprofitable levels.

Unlike all other textile fibers, because of its mechanized chemical production, it is possible for rayon manufacturers to insure price stability by regulating supply and demand in accordance with the consumption requirements of customers. It is now said that this policy of regulation is to be followed by contracting output until demand revives.

**Idle Equipment.** Each branch of the textile industry requires special machinery for manufacturing its product. In addition, each plant is highly specialized, and manufactures one kind of product. Hence, when one phase of the industry is busy, due to the popularity of that product, other plants are idle and the capital involved in the equipment and plant is producing no income.

### QUESTIONS

1. What is meant by the expression "business cycle"?
2. How often does the business cycle take place, and is it always of the same length and intensity?
3. Give examples and dates of types of depression.
4. Explain in detail the various stages or steps of the business cycle.
5. What are the causes of the business cycle?
6. Describe the effects of abnormal weather on the business cycle of textiles.
7. How much effect has political influence on the business cycle?
8. (a) What is speculation? (b) Will speculation influence the business cycle?
9. (a) What causes over-production? (b) Can production be regulated? (c) Give examples as applied to textile trades.
10. Has the unequal distribution of wealth influenced the business cycle?
11. (a) What causes the rise and fall of profits? (b) What effect has this on the business cycle?
12. What effect have psychological conditions on business — pessimism and optimism?
13. Name with examples some of the social effects of the business cycle.
14. Is it possible to have prosperity in all branches of the textile industry at the same time?
15. What effect has fashion on the business cycle of textiles?
16. Explain some of the reasons why cotton has not been popular.

17. Why has the amount of wool produced and used changed from time to time?

18. State some of the devices used to make silk popular.

19. Why has rayon been popular? Has it effected the sale of other textiles?

20. When one textile is popular, what happens to the manufacturing plants of other textiles?



JAPANESE DEPARTMENT STORE, DAIREN

Sells a number of American manufactures, and does a business of about \$1,000,000 annually.

## CHAPTER XIV

### TRANSPORTATION

**Importance.** Originally each community was self-supporting. It consumed only what it produced, and it produced all it required. But with the division of labor and specialization came territorial division of product, and each district became more or less dependent upon the products of other communities. Today no community is self-supporting, because no community produces all it consumes; hence the necessity of a system of transportation to bring silk from Japan to the the mills of Paterson, cotton from the cotton fields to the mills of New Bedford, wool from the Western States to the mills of Lawrence, shoes from Brockton to Idaho, finished costumes and clothing from New York City to Western and Southern homes, etc. Transportation systems are necessary and may truly be considered a basis of industry.

**The Transportation System.** The transportation system of any community, state, or country is a foundation stone of prosperity, for without this we have no business — we are unable to ship foodstuffs, wool, cotton, etc., from the farms to the cities, or finished clothing from the cities to the farms. Because transportation is so vital, local communities, states, and the Federal government assist as far as possible in keeping the transportation facilities in excellent condition. The government has in the past stimulated the growth of transportation by grants of land and money, and naturally both state and national governments exercise more or less control, through supervision by the Interstate Commerce Commission and Transportation Board.

During the early days of the government, a large number of railroads and other facilities of transportation were begun, and these have naturally grown until today there are many rival facilities which tend to develop undesirable competition, eventually eliminating some of them. The government discourages the development of excessive competition in transportation because it is

wasteful. A monopoly of transportation is desirable from a social point of view if it is supervised by the government. What has been said in regard to transportation applies equally well to other public utilities, such as water, gas, electricity, power, etc. Such monopolies should exist only under government supervision.

Out of the activities of exchange came the development of all forms of communication — telephone, telegraph, radio, mail service, etc., as well as forms of transportation — in the attempts rapidly to transfer goods from producers all over the world to the consumers. All of these agencies are *productive agencies* (of wearing apparel and other commodities) because they increase the production of wealth by conveying goods to the consumer. They give place utility. Hence these agencies, from an economic point of view, should be efficient. A study of some of the principles underlying transportation should naturally be part of a course on the economics of clothing and wearing apparel.

Under our system of division of labor not only is each worker a specialist in some branch of industry, but each community is a specialist in some branch of production and is not self-supporting. It depends on neighboring communities to supply some of its needs through the system of exchange. This requires an effective system of transportation, so that the commodities may be quickly and safely transported from one community to another.

**Types of Transportation.** The first effective system of transportation in this country was by the rivers and waterways. Thus we had the shipping of bales of cotton on the boats of the Mississippi River. Then came transportation by covered wagons. With the development of the country, railroads were established as early as 1830. The first railroads were to meet the convenience of a city and its surrounding towns; next the various cities were connected; followed by trunk lines and transcontinental lines connecting coast-line cities and ocean-to-ocean cities. They have developed to a point where the vast system of railroads is absolutely necessary to society.

Motor trucks, and finally airplanes, were developed to supplement the train service. Today, our transportation system is made up of the following facilities: (a) canal boats, (b) steamship lines, (c) passenger and freight car service, (d) motor trucks, and (e) airplane service. Each has its advantages and disadvantages.

Canal boats are used for slow service, such as bringing materials like raw cotton from the inland towns to the larger cities and sea-port cities. The rates of such transportation are very low. Steamship lines are used to transport such commodities as silk from China, cotton from the United States to England, and to transport raw commodities and finished commodities in exchange between coastwise cities. For instance, we find raw cotton transported by coast-line steamers from southern ports to the mill cities of New Bedford and Fall River.

Freight rates are lower on the coast-line steamers and other water routes than they are on trains, but the speed is much less. Where quick service is desired it is not uncommon to combine steamship and railroad service, as is done in the transportation of silk from China to New York. The following announcement of a shipment of silk will illustrate the practice :

Carrying a total of 1825 bales of raw silk for the American market, the *President Lincoln* sailed from Yokohama, China. Of the total cargo, 1474 bales will take the all-water route, while 351 bales will be transferred at the Pacific coast for rail shipment to New York. The ship will dock at San Francisco on March 22, and the 351 bales scheduled for overland shipment will reach New York on March 26. The Panama shipment of 1474 bales should arrive in this market on April 9.

Part of the shipment was sent by rail at additional expense to meet immediate needs, while the rest that was for reserve stock was sent by boat at less expense.

**Transportation Rates.** The service of the railroad system of the country is basic to the clothing and wearing apparel industry, as well as to other industries. If rates are too high, they may drive industries from certain localities, causing much inconvenience and waste, depriving many people of work, and paralyzing certain communities.

While it is possible to calculate the cost of hauling one ton per mile during any given period, it is impossible to calculate the cost to the railroad of the transportation of cotton from Southern points to the mill cities of the North, or the cost of transportation for gray goods from mills in the South to the finishing plant in the North, and then the return of the finished cloth to the South. Therefore, the railroad rate of textile-clothing transportation is distance, on

the principle of the value of the transportation service to the cotton mill, cotton finisher, or converter. In other words, it is based upon what the textile industry will bear. This is the principle of monopoly price, which is fixed at the point which will yield the largest return and still retain the business. Of course, such a principle means that there is a constant wrangling between the transportation companies, the mill authorities, etc. The Interstate Commerce Commission is appointed by the Federal government to hear such disputes in cases where the commodity passes from one State to another. The Transportation Act of 1920 permits the Commission to fix rates to yield the railroads from  $5\frac{1}{2}\%$  to  $6\%$  on their value as determined by the Commission. The value of the railroad is the cost of replacement at 1913 prices. The Railroad or Public Service Commission of the State is responsible when the dispute concerns the transportation of a commodity entirely within a State. The dispute between railroads of the South and the Cotton Finishers' Association, given at the close of this chapter illustrates the problem.

**Freight Rates.** The railroad is the most important part of the transportation system and naturally requires a large investment — fixed capital goods — consisting of (a) the land it covers, (b) the road bed graded and properly made, (c) tunnels made through mountains and hills, (d) bridges built over rivers, etc., (e) stations and storehouses erected, (f) a proper system of signals, (g) locomotives, cars, etc. The time it takes to lay out and equip a railroad may extend over several years, during all of which no return is made on the fixed capital invested.

Money is raised through the issue of stocks and bonds. The chief revenue of the railroad is derived from charges for transportation services, called freight. Since the exact cost of transportation for each person and each commodity from place to place can not be established, the railroads have a theory of their own for determining rates, based upon the theory or principle of the value of the transportation service to the particular commodity carried, which is practically charging what the traffic will bear or what the service is worth.

As a result, railroads publish the rates of passenger service from station to station, and rates of transportation of all commodities

classified into groups, with each group at a specified rate for hundred pound or carload lots. These rates are spoken of as the tariff.

In some cases, because the traffic of a particular business is unable to bear a higher rate, the rates are so low as to be less than the cost of transportation. The medium class business or traffic will stand a rate that will meet the cost of transportation, while the better class business or traffic will stand a rate above the cost of transportation, thus leaving a margin for covering the loss at low rates.

The government regulates the rates of the railroads through the Interstate Commerce Commission at Washington, D. C.

**Consolidation of Railways.** All through the United States today there are vast stretches of unnecessary rail mileage. No other country in the world — except Canada — has been so overbuilt. Not even the remarkable growth of American industry in the last forty years has been able to absorb this over-production completely and put our surplus rail miles to work. The recent slump and the rise of competition, unforeseen forty or fifty years ago, when over-production of railroads was at its worst, have only served to aggravate the problem.

The overbuilding of railroads was not limited to any one portion of the country. Certain parts of New England suffered from it, and also parts of Pennsylvania, Western New York, Ohio, Illinois, Iowa, and many other sections. But nowhere has the situation been worse than in the Northwest.

This wasteful competition, combined with the development of other forms of public carriers, has done much to harm the railway system. Hartford, Conn., has but one railroad serving it; so has Providence, R. I. Compare the situation with that where there is either competitive rail service or a pooled service such as exists today between Chicago and St. Louis, between Chicago and Minneapolis, and between Chicago and St. Louis and New York. In any month, in any week, literally thousands of waste miles of expensive through passenger trains still are being operated in these services. Almost all of the unprofitable local and short-line trains have been plugged, but there is much wastage through the big ones. This is true even though at present the two chief competing roads between New York and Chicago are preparing to cut down

and simplify service — a saving of 3,000,000 train miles (or \$5,000,000) a month.

The competitive waste between roads is not entirely in the passenger service. Take the question of trucking. For a time the railroads made some attempt to meet truck competition by lowering rates. When the truckmen, feeling this new competition of the railroads, in turn lowered their rates, the rail carriers brought their rates down to the minimum point allowed by their filed tariffs. Further than this they simply could not go, because of government regulation. The truckmen, being free agents, had no such restrictions. They went lower, and lost a little more money on each transaction. The net result was that business was given to the truck operators, and the railroads gained nothing.

Some of the railroad companies in California, Texas, and Oklahoma — and in the East as well — have tried contracting with local trucking companies to handle local package freight on the highway and so never letting it get inside a box-car. There has been recent action by the eastern roads in establishing low flat-car rates between New York and Philadelphia and between New York and Scranton, so that the bodies of loaded trucks may be placed upon the cars and then transferred to a fresh motor chassis at the terminal. These are all steps in the right direction.

The solution lies in elimination through consolidation. Thirty per cent of the rail mileage of the United States brings in a bare two per cent of the gross revenues. There are towns, whole communities, whole States, that quite naturally will resent the tearing up of tracks and the abandonment of railroad lines. Politics will come into it. Yet elimination is the very thing that must be done — in fact, it already has been started. The Boston and Maine and the New Haven railroads have completely abandoned a considerable mileage in New England, and much more has been partly abandoned.

The real solution of this would seem to lie, first, in rail consolidation, and then, elimination of trackage, consolidation of terminals, pooling of trains and other rolling-stock facilities. This would result in a more closely coördinated system of national rail transport (to which can be coördinated, in part at least and upon similar terms of regulation, air and water and highway transport), efficiently operated and well sold to its potential patrons.

The railroads, in the interest of economy and efficiency, must effect more coöperation, consolidation, and elimination. The fact that the roads have not succeeded very well up to the present in real coöperation is no proof that the thing can not be done. The work of the American Railway Association in its car service division, and in its Advisory Committee in coöperation with the shippers, shows what may be accomplished when the proper start is once made. A thousand or more little matters of difference between the roads and their patrons, which in other days might easily have led to the filing of actions before the State or the Federal regulatory commissions, have been quietly and amicably adjusted out of court, and friendships have been kept which otherwise might easily have been destroyed.

**Competition from Motor Transportation.** There has been suggested the consolidation of all Federal activities in connection with transportation into one department under a cabinet officer to be known as Secretary of Transport. This is a method of coördinating rail, motor, air, and pipe-line transportation facilities. In the transportation field, the distress of the rail carriers is too well appreciated to need restatement there. The rail system is vital to all our activities. Collapse of rail transport would be a national calamity.

Our transportation situation has been complicated in recent years by development under government encouragement of water ways; by pipe lines; by the unprecedented expansion of motor vehicle haulage; and, in lesser measure, by the development of air transportation. Each of these is a potential competitor of rail carriers.

The motor bus and motor truck are modern facilities with advantages and benefits to which the general public is entitled. The public right in this direction, however, may not prudently be exercised to the extent of critical impairment of the rail system. To bind the latter with stringent regulation, while imposing no restraints on motor vehicle haulage, is to act so that a public right may be exercised even though it destroys a national necessity.

In the first place, an appraisal of the effects of competition is made extremely difficult by rate-cutting tactics resorted to by the railroads to retain business on their lines. In the Southern Railway's own territory, for example, competition of motor trucks is

reported increasingly effective in the carriage of certain commodities, such as cotton, which have long been among the most profitable types of traffic for the railroads. The rail carriers, of course, do not sit by idly and permit this business to go to competitors. Instead, by cutting rates, they have been able to retain most of it, but the reduced revenue makes such traffic less profitable.

In appraising the effects of competition from motor trucks, waterways, and pipe lines, furthermore, there may be a tendency to overlook more subtle developments that have had a similar effect. The development of hydro-electric power and the evolution of high-tension transmission lines to transport electrical energy long distances to replace coal are cases in point. Developments of this type reduce the need for transportation of coal, the most important single item of traffic from the standpoint of both volume and gross revenue carried by the great majority of railways, including the Southern. Technological developments of this kind leave a permanent impress on the position of the railroads similar to that of the directly competitive transportation agencies.

On the other hand, a substantial portion of the traffic lost to competitive agencies can be recovered with the adoption of a program of equalized regulation of transportation and the coördination of all facilities.

The period from 1922 to 1932 has been a critical one. The railroads reached their greatest period of service in 1922. Since then, more than 750,000 employees have been dropped. Wages have decreased as well. Trains have been eliminated. In 1932, 53 per cent less passenger-miles were being run than in 1922. Miles upon miles of empty freight cars and idle locomotives standing on side tracks all the way from the Atlantic to the Pacific tell the story of what has happened to the freight traffic. Thousands of railroad men out of work, idle shops, and low quotations on rail securities complete it. There were, in 1932, 23,000,000 automobiles and motor-buses and 3,500,000 motor-trucks traveling over the 500,000 miles of improved highway of the United States; 10,500,000 tons of inter-coastal freight passing through the Panama Canal; many miles of airplane routes, commercial passengers making daily flights between New York and Chicago, between New York and Boston, and from the Pacific Coast to the Atlantic.

But despite the rather grave inroads of the motor-truck and other carriers, the American railroad still continues to carry some 75 per cent of the freight of the land, and certain swift passenger trains still are well patronized. There has never been a time when a man could go more comfortably or in a degree of safety equal to that of the present moment. In 1930, out of every 100,000,000 passengers, only seven lost their lives in train accidents upon American railroads. In 1932 the record was still better.

Many a railroad is today in a poor position to fight the motor-bus or motor-truck. The flexibility of both is remarkable, and often the economy as well. The motor-bus has its special points. In a dozen years it has been evolved into a swift-running and comfortable vehicle. To its advantages are added the obvious ones of the clean, well-paved, modern highways over which it operates, even if it aids not at all in the maintenance of these highways. The wear and tear of these heavy vehicles upon the average state road is no slight matter, and a matter for which the taxpayer pays in the long run and generally not such a long run at that.

But the bus is not the gasoline competitor that the railroad fears the most. For every man who rides in a bus upon a highway, at least four are riding in privately owned and operated motor-cars. Here the flexibility increases; the motor-car owner makes his own schedules, is free to come or go when or where he wills to a degree that makes the railroader scratch his head sadly and wonder how he can combat this sort of thing. A solution of the problem seems impossible.

Automatically, some of the unfair advantages that the motor-bus and the motor-truck have over the railroad are now being reduced. Taxes are being raised by the various State legislatures, and are being readjusted to a figure which a little more nearly represents the great wear and tear upon pavements. Sharp restrictions against over-size and over-speed are being more rigidly enforced.

Given attractive coaches and swift-running time, with the rates well adjusted to the needs of the situation it seeks to meet, the railroad still has a good fighting chance to get its fair share of the passenger traffic, and more than this it has no real right to expect. The longer the run, the better that chance becomes. To this end many of our railroads are already moving.

More than three years ago the American railroads began to realize the devastation that the trucking interests, using the fine new public highways of the land, were wreaking upon them. Motor-trucks were making sad inroads upon railroad freight traffic, particularly the less than carload or package freight. The roads should have installed a pick-up and delivery system long ago, but they had not done so. In small towns, large trucks came, often in the middle of the night or very early morning, and exchanged goods with small trucks on local runs. Public streets and open squares were, and still are, used for this freight interchange, often in communities where the railroads long ago built large freight interchange stations at no small cost to themselves, and upon which they are paying goodly taxes in addition to sizable pay rolls. From the truck interchanges the average town gets nothing whatsoever, save wear and tear upon its roads. And only the expert highway engineers know how great this wear and tear really is.

Some of the railroads themselves have made use of the highways as correlating factors. Many a railroad is today in a poor position to fight the motor-cars. In the long run, the highways must correlate with the railroad, not combat it. There is plenty of traffic for each. It takes only a fair degree of intelligence to discover which traffic is best suited to the different forms of carriers.

In 1932, the railroads showed increasing aggressiveness in their effort to retain business from motor-vehicle competition, as well as to regain some of the traffic previously lost to roadway competitors.

The New England roads have turned to store-door delivery without extra charge on less than carload freight. The Railway Express Agency, formerly the American Railway Express Co., is utilized for this purpose. In addition, the carriers plan to enter into direct competition with trucks on line hauls by truck service over the same routes operated by the Express Agency, which is jointly owned by the railroads of the country.

The Interstate Commerce Commission has recommended Federal regulation of motor vehicles engaged in interstate commerce, and that railroad and water lines be encouraged to use the public highways for supplementary service in the following terms :

“That transportation by motor vehicles, buses, and trucks, over the public highways is, within certain respects, a superior service, and that the rail and water lines should be encouraged in the use of this instrumentality of commerce whenever such a use will promote more efficient operation or improve the public service ;

“That there is substantial competition between rail and water carriers on the one hand and motor carriers on the other for the transportation of both passengers and freight, and that this competition is increasing ;

“That such competition is conducted under conditions of inequality, particularly in regard to regulation ;

“That a contributing cause, aside from the general business conditions of the present financial condition of the railroads, is the existence of unrestrained competition by rival transportation agencies ;

“That there is today and probably would be under normal conditions an excess of carrying capacity in existing transportation facilities ;

“That unrestrained competition is an impossible solution of the present transportation problem and is incompatible with the aims of coördination under regulation.”

**Air Transportation.** The Pan-American Airways has lately initiated a special service between the United States and the countries to the south that represents one of the most sensational developments in the history of foreign commerce. The innovation, introduced by Pan-Air, in combination with the Panagra and Scadta systems of the west coast and Columbia, consists of an aërial express service which allows the rapid transport of many articles hitherto reserved to the slower carriage of the steamship. The list of the merchandise which the company has already carried in planes includes cargoes of great variety.

Its possibilities are limited only by the capacity of the planes and the relatively higher rates that are necessarily charged for air transport of any kind. However, urgent need or desire for a certain article can, when it is strong enough, easily overcome the obstacle of cost.

A new air freight service has also been established between the Atlantic seaboard and the West. Planes carrying nothing but

freight or express now follow routes in every direction — routes over which some passenger air lines also carry packages. The *Commerce Bulletin* of the Port Authority discloses that New York has become the terminal for air package services that have grown rapidly.

Mail carried by air in 1932 in the United States increased 10 per cent, while the tonnage of express and freight carried by air jumped more than 200 per cent. One of the important passenger lines flying between New York and Washington carried 271,000 pounds of express in the year. Another line, with a twenty-four-hour schedule between New York and the Pacific coast, started a pick-up and delivery service handled by the Western Union Telegraph system. One air express company announced an overnight package service between New York and Milwaukee.

While rates for these services vary among the different lines, it is possible to send a ten-pound package from airport to airport on the New York-Washington hop for \$2, with extra charges for picking up the package at one end and delivering it at the recipient's door at the other. At least one line eliminates the extra charge for service between the airport and the addresser or addressee. By an overnight service it is possible, for example, to have a package delivered in a Wisconsin town the morning after it leaves New York; this may be less time than it takes for a letter to go through the mail from Manhattan to a suburban town in New Jersey.

The air ferry inaugurated between the Newark airport, the Floyd Bennett field, and the Curtiss airport saves hours for passengers or parcels changing planes in New York on the way north, south, or west from other cities. Certain air lines have found an astonishing public response to their efforts in the past year.

**Disputes.** The following cases illustrate the problems that arise in transportation in the textile industries.

Very few people realize the importance of textiles and wearing apparel to transportation as well as to the basic industries. To illustrate: In the finishing of cotton cloth it was found that each ton of gray cloth shipped to a finishing plant increases revenue traffic to the transportation lines more than 500 per cent by the additional equipment, and supplies necessary to do the work. The processes of finishing require the use of large quantities of heavy

materials and supplies, the largest single item being fuel. The finishers are large consumers of heavy chemicals and of an unlimited variety of dyestuffs. They use large quantities of lumber for cases and paper tapes for packaging. They are large buyers of heavy machinery and the supplies necessary to keep the buildings in a serviceable condition, since the operations of finishing result in a very short serviceable life of much of the equipment used.

The cost of transportation has been a very important factor in the development of the finishing industry in the northern district. With the development of railroad transportation and the cotton mill industry in the South, there sprang up the present system of commodity rates on cotton cloth movement into the northern district from southern mill points. This transportation arrangement made it possible to ship gray goods into the northern district to be finished and to reship the finished cloth to the principal market center at moderate cost. Due to the large volume of gray cloth moved from southern points into New England, it was possible for carriers to name special rates, known as commodity rates. This system of commodity rates, equalizing delivery costs, put southern mills on a parity with cloth mills located in the northern territory.

To the extent that northern finishing plants finished southern-made gray goods, the northern finishing plants aided in the development of the southern mill. A sudden and violent change in the transportation cost would prevent the industry from readjusting itself to present conditions without tremendous loss. There is an important need for keeping the industry on a competitive parity, in so far as it is possible to do so through the establishment of favorable freight rates.

It must constantly be borne in mind that the two rates, that is, the inbound rate on the raw product to the finishing plant, and the rate on finished fabric outbound to the principal market centers, should approximate equality. This is the basis upon which the industry grew up. It is the basis on which the northern finishing industry was established, and with a few exceptions it is the basis upon which the industry is operating today as far as eastern markets are concerned.

**Finishers' Disputes.** Cotton finishers, that is, manufacturers who finish cotton cloth for the consumer, find that the textile

manufacturers in the South have an added advantage over those in the North.

The following will illustrate the rate situation referred to :

	<i>Per cent</i>
Present rate from southern gray mill to southern finishing plant, approximately . . . . .	\$ .30
Present rate from southern finishing plant to Chicago, approximately . . . . .	.83
	Total \$1.13
Present rate from southern gray mill to finishing plant in New England, approximately . . . . .	.79
Present rate from New England finishing plant to Chicago, approximately . . . . .	.86
	Total \$1.65

Such a difference is in favor of the southern against the northern mills and unless converted will wipe out the northern industry. Hence the northern manufacturers appealed to the Interstate Commerce Commission to correct this difference so that the rates would be the same.

**Cotton Rate Disputes.** In 1932 the textile manufacturers in central New York, and especially the Mohawk valley, appealed to the Public Service Commission in its inquiry into class freight rates for transportation of property on steam railroads within the State.

A representative of about forty textile mills in the central part of the State stated that these industries which he represented were suffering from competition with southern manufacturers, who, he said, were operating under cheaper freight, fuel, power, and labor rates than the mills in the North. It was stated that within the past few years about thirty New York State mills, employing approximately 15,000 people, have either moved their operating plants to the southern States or gone out of business. He also stated that southern localities are offering many inducements to northern mills to locate there. These inducements include building plants, cost of moving machinery, and free taxes.

**Railroad vs. Boat Rates.** Cotton-carrying railroads of the South have adopted rate cutting, their opponents' chief weapon. It has been adopted by the roads in their determination to regain the cotton shipping business — mainstay of many a southern rail system.

Of especial benefit to the Mississippi valley territory will be the newly proposed reductions on cotton moved inland to the mills of the Carolinas, where production of cotton goods nowadays exceeds the production of New England mills.

The reductions, ranging from 20 per cent to as high as 30 and 35 per cent have been ordered published, effective February 29, 1932, by railroads on both sides of the Mississippi, in answer to independent barge and truck competition. Recently railroads operating west of the Mississippi agreed on a 20 per cent reduction in rates of cotton shipped from west of the river in Arkansas and Missouri to the Carolinas, and eastern valley lines consented to join with them in publishing reductions.

### QUESTIONS

1. What is meant by transportation?
2. State the importance of the transportation system.
3. Explain the development of the transportation system.
4. Why is the government interested in the development of the transportation system?
5. What Federal and State agencies supervise the transportation system?
6. Why should the transportation system and other public utilities be monopolies supervised by the government?
7. Explain how the transportation system and means of communication are the outgrowth of the activities of exchange.
8. Explain the different types of transportation facilities.
9. Why is an effective system of transportation necessary for the development of any industry?
10. How are transportation rates determined?
11. Explain how duplicate systems have been built and what effect such a system of duplication has had on industry.
12. Describe the wasteful effects of competition in transportation with motor-buses.
13. State the recommendations of the Interstate Commerce Commission on motor vehicles.
14. State the extent and also the advantages of air transportation.
15. State some of the problems of the textile and clothing industry with regard to transportation.

## CHAPTER XV

### ADVERTISING AND BUSINESS ETHICS

**Importance.** Advertising is a means of creating or increasing demands for goods and services on the part of consumers. We learned earlier that the scope of man's wants and needs could be expanded almost indefinitely by this process of education, wish-creation, and suggestion. Advertising calls to mind types of commodities — such as clothing and service to wearing apparel — that consumers may never have been aware of before reading the advertisement.

Advertising is particularly effective in the clothing industry, because of the variety of wants, uses, and kinds of wearing apparel that can be presented. It is one of the most effective means of increasing the sales of clothing.

**Characteristics.** Examine carefully the advertisements of fabrics and clothing. Notice that they bring out the characteristics or qualities of the product by pictures or printed information that appeals to one's taste or needs. Any agency can justify itself in the business organization if it contributes to the increase in circulation of textiles from the mill to the consumer. Advertising is one of the most effective means of impressing the public with the value of textiles and thereby creating a demand for them. Most people do not realize the need of a fabric until its advantages are presented to them. These qualities are called "selling points."

Advertising consists of making known to the public the merits of a commodity so as to induce its purchase. Competition is the act or proceeding of independent endeavors of two or more persons to obtain the business patronage of a third party, by offering more advantageous terms or goods as an inducement to secure trade. Therefore the firm that presents the best advertising plea may secure the trade.

35,000 YARDS OF HEAVY

# Silk Flat Crepe

SEE WHAT YOU CAN MAKE  
FOR PRACTICALLY NOTHING:



Sleeveless silk  
dress for about  
\$1.02

Silk dress with  
sleeves for about  
\$1.53



Silk slip for  
about 68¢

Silk pajamas for  
about \$1.36



Child's silk  
party dress for  
about 68¢

Silk lining for  
coat about  
\$1.19

Silk blouse for  
about 68¢



## 34¢ YARD

It's an August super sale price, the lowest at which we have sold this quality silk. Actually less than the wholesale cost in the present rising silk market. This is "tried and true" silk, identical to the quality that has been selling right along in our department at higher prices. Over 40 colors including Fall shades.

**SILKS**  
Sixth Floor

There will be no more at this price when the quantity is gone. We suggest you come early to get a complete choice of colors.

Not less than two yards to each customer  
No mail or telephone orders

GOOD FABRIC ADVERTISING — SUGGESTING USES

**Advantages.** Advertising has been developed during the last generation or more with the increase of business and the application of scientific principles to selling.

Originally the mills that made wearing apparel were small and few, and the name of the mill or product, like "Fruit of the Loom," was known from ocean to ocean. With the increase of the market came a demand for a device that would continue or increase the sales. So advertising in its various forms has been developed principally to call the attention of the consumer to the wearing apparel or commodity, but also to keep the name before the public, so that the sales will at least be maintained, if not increased.

To illustrate: Twenty-five years ago women used cotton almost exclusively for daily wear. They wore cotton chiefly because it was sturdy and inexpensive; the fashions were not charming and attractive.

A quarter century has passed. Cotton has had its ups and downs in public favor; but today it reigns anew. Countless thousands of women have rallied back to cotton. Hundreds of manufacturers, dressmakers, coutouriers, and department stores are designing and selling cottons — fashion's favorite.

The widespread revival finds its origin largely in the fact that manufacturers have concentrated on styling their cottons. Along with this they are introducing new methods of production and merchandising. They are advertising their cottons. They are identifying their cottons by placing their name or trade-mark directly on the cloth.

Manufacturers who initiated a trade-marking policy only one or two years ago are already benefiting. They find that women are asking for their fabrics by name. Thus substitution is prevented, advertising is made more effective, steady all-year-round demand encouraged, and good will created. The picture is just as bright from the consumer's point of view. Accustomed to buying almost everything else by brand, she depends on the trade-mark on cottons as a guide to quality, dependability, and price protection.

Good, wisely placed advertising serves the double purpose of cheapening sales marketing and attracting new trade. The total volume of retail trade in 1929 was \$43,000,000,000 and from census figures it looks as though the cost of doing business in retail stores

LADY  
PEPPERELL  
SHEETS

[ Facsimile of  
Trade  
Mark ]

Treat yourself to the fine linen-like texture of Lady Pepperell, for now you can buy them at prices you've paid for average quality sheets. Remember every inch is woven with 4 extra threads to give you longer wear! Choose them in snowy white, solid color or with colored hems at these special prices.

Three-quarter size, 72x108      **98c**      Double bed size, 81x99

White Sheets

Single or Twin Bed Sizes

63x99.....84c      63x108.....89c

Three-quarter Bed Sizes

72x99.....94c

Double Bed Sizes

81x108.....\$1.09

Double Bed with Inner Spring

90x108.....\$1.19

WHITE PILLOW CASES

Size	Price	Size	Price
42x36.....	24c	45x38½.....	28c
45x36.....	26c	50x38½.....	32c

AN ADVERTISEMENT WITH APPEAL TO THE CONSUMER  
Note the trade-mark.

averaged about 26 per cent of sales. This would mean that it cost nearly \$14,000,000,000 to operate these stores. It has been estimated that a little over three per cent of total retail prices was spent during that year for advertising.

If the same volume of goods had been marketed without advertising, it is safe to say the total marketing bill would have been a few billion dollars higher. Just think of the number of salesmen that would have been necessary if they had relied wholly on personal salesmanship. Hence one can see the economic value of advertising.

The use of advertising has also been advocated in overcoming the slump of buying during a period of depression. The psychology of fear has restrained the manufacturer, the banker, and the home owner. Advertising can perform a great service to the country by creating a market of confidence which will replace the psychology of fear that underlies much of our business troubles.

When depression reaches its advanced stages, the opportunity for effective psychological influences becomes especially great. At such times, the necessary economic readjustments have, for the most part, taken place; the chief restraining influence is a universal attitude of fear and uncertainty, based, in part at least, on vague and formless apprehension. It is not so much a lack of the power to purchase as it is a lack of the will to purchase that prevents recovery.

In the course of time, the fear, like all great waves of feeling, must pass away; but the reversal of the trend can be quickened by the timely sounding of the right note in the appeal of business men to their public. Advertising has made possible the astoundingly rapid growth of new industries by changing the living habits and the buying habits of millions of people. Why should it not be equally useful in accelerating the transition from depression to revival?

**Types of Advertising.** Advertising may be classified as (a) general, (b) local, or (c) direct in character. General advertising is directed principally toward making the public familiar with the product and creating an impression of its excellent qualities, thus causing a demand for it. Most trade-marked articles which are nationally or internationally advertised come in this classification. Local advertising is usually carried on by the retailer to call the attention of

customers to wearing apparel and other commodities on sale in his establishment, and to induce them to purchase. Direct advertising may be a personal appeal to a customer, by means of direct mail circulars, etc., to call attention to the qualities of an article and to create a sale for it.

**Branded or Trade-Marked Products.** If we study carefully advertising of the most successful manufacturers and sales agents of wearing apparel, we shall find that the advertising devices consist of the following items: (a) name of the wearing apparel, (b) its use, (c) composition and desirable qualities, (d) manufacturer's name, (e) selling agent's name.

The name of the wearing apparel is very important because it is the means of identifying or selecting the article. Therefore the name should be one that is easily remembered and associated with the article.

Advertising associates the name of a firm with a textile of a certain kind. In this way the good name or good will of a firm or fabric is established and increases the sales. The association of quality with certain firms is reported from customer to customer and from family to family and becomes part of the assets of a firm and is known as its "good will." The name of the textile becomes the trade name or trade-mark and may be copyrighted; that is, the United States government will allow a firm to register at the Patent Office at Washington the name of a textile. If any other firm uses this name, it may be prosecuted in the courts and made to pay damages to the company whose trade-mark has been illegally used.

In Chapter II we saw that trade-mark is a term used to cover any mark, name, or other arbitrary symbol or combination of such applied to merchandise to distinguish it from goods made by others or to designate its source. An owner may register his trade-mark with the government if he is a citizen, or if he is located in any foreign country which by treaty, convention, or law affords similar privilege to citizens of the United States. The registration fee is \$10 and the period of its duration is indefinite.

Another method of distinguishing wearing apparel is through a registered design. A manufacturer or designer may have a design copyrighted if it has not been used before.

Wearing apparel on the market may be divided into two large classes of (1) unlabeled products and (2) products with trade-marks or brand names. Branded or trade-marked articles are those placed on the market under the name of the manufacturer or retailer. Some merchants do not care to sell branded merchandise, substituting in many cases costumes, coats, suits, etc., bearing the name of the retailer and sold as his own brand or make. Other merchandise, without label or brand of any kind, is often placed on the market by retailers to increase the volume of their business. This practice tends toward cheap and inferior merchandise, which the consumer rejects after a short time in favor of branded or trade-marked articles.

The importance of some identification mark on a product is generally recognized. Experience shows that it is desirable to have the manufacturer's name on all fabrics. The maker is the only man who knows the exact quality. For example, only the Lowell Manufacturing Co. knows the kind of cotton used in Crown Head cloth — the treatment and twist, the selection, the dyeing, the dyestuff used. It places the words "Crown Head Cloth — Fast Color" on every yard of selvage. With the manufacturer's name on the goods, you can then put the responsibility for the quality of cloth and dyeing on the man who knows how they were made.

Throughout the entire apparel industry, from textile manufacturer to the retail distributor, a revolt is under way against the making and handling of goods of poor quality.

**Abuse of Trade Names.** One of the most notorious of the price abuses in recent times has occurred when owners of trade-marks continue to demand full prices at retail, and sell the products of their factories in non-competing fields at normal market values. Shirts, underwear, suspenders, handkerchiefs, and chiefly the products that go to men, furnish most of the examples of the abuse of a trade-mark in maintaining prices. When the cost of producing an article of wear falls fully a third, it would seem to be the right of the consumer to secure some benefit from it, but because men are notoriously unwilling to change garments once they become accustomed to them it is possible for the dealer to get the full price and absorb a larger profit. Women

**Natural Muskrat**

**\$50**

Pelts worked chevron effect.

**Grey Squirrel**

**\$125**

Four models of fine Siberian pelts.

**Karakul**

**\$89**

Newest styles in black or brown.

**Karakul, Silver Fox\*\***

**\$149**

Natural silver fox trimmed.

**Amer. Broadtail\*\*\***

**\$99**

Tan or platinum grey with notch collars.

**Hudson Seal\***

**\$169**

Six models, variously trimmed.

**Hudson Seal\***

**\$99**

Two self trimmed models.

**Hudson Seal\***

**\$199**

Trimmed with silver fox.

**Leopard Cat**

**\$119**

Three smart new models.

**Alaska Seal**

**\$279**

Three models of finest quality U. S. Government pelts.

**Dark Raccoon**

**\$119**

Deep shawl collars.

**Dark Mink**

**\$575**

Dark pelts. Two new models.

**A small deposit will hold your furs until November 1  
and you may pay the balance in weekly or  
monthly payments until then.**

*\*Dyed Muskrat*

*\*\*Lamb or Kid*

*\*\*\*Processed Lamb*

**A DECEPTIVE ADVERTISEMENT**

Note the large type for the name of the fur and the small type in foot-note showing that these are substitutes for the standard furs.

have learned how to stop buying trade-marked lines when they are overpriced.

**Successful Advertising.** The success of advertising depends upon securing the confidence of the reader. Hence, a false statement or a misrepresentation in the advertisement arouses suspicion of the merit of the wearing apparel and causes loss of interest in the article, as well as a loss of sale by failure to create a desire.

The advertising should be conducted according to definite principles, as outlined in Chapters II and III. A careful study of the possible markets for the wearing apparel is also necessary, and a knowledge of the means or medium of reaching the consumer or the market.

The advertising should be well written and displayed objectively to attract attention, to arouse interest, and to bring out the qualities of the wearing apparel so as to create a demand in the reader's mind for the article. The success of the advertisement is determined by the demand created.

A check should be placed upon advertising to see if it is effective and pays. A definite program should be planned — the field to cover, the number of people to be reached, the results to be obtained, the cost of the advertisement, etc. Return coupons for samples or advice are excellent methods of checking the success of an advertisement.

The initial expense for advertising is great, because of the large space required at first, but this may be gradually reduced so that the product is kept continuously before the public.

Spasmodic or occasional advertising is not successful. Confidence is developed in advertising only by its continuous use, except in the case of seasonal wearing apparel. Regularity in advertising gives an impression to the consumer of stability and permanence which will be associated not only with the product but also with the firm.

The cost of advertising is measured in terms of what you get for the money paid for it. To illustrate: A page advertisement in four colors in a popular magazine costs \$16,000. The magazine has something of interest to every family, such as thrilling stories from real life, dramatically illustrated, and interestingly told. It reaches 5,500,000 families. The cost of a page at \$16,000 that

reaches 5,500,000 families is one-third of a cent per family. This rate is considered very reasonable.

**Arousing Attention.** The chief means of arousing attention in an advertisement of wearing apparel is through some attractive picture or illustration in colors, and a prominent place or position

Before a newspaper can sell goods for an advertiser *it ought to be able to sell itself*. It hasn't done that when it goes back while the population in its own community increases by 409,541 families — 55 per cent.

When a newspaper trims, ignores the needs and interests of its community, cuts down on news, the public soon catches on.

The *Times* doesn't starve its news columns. It has not slashed its news service. It continues to send its trained reporters with the Sox and Cubs when they play out-of-town games. It continues to maintain the best staff of correspondents in every foreign country of importance to readers.

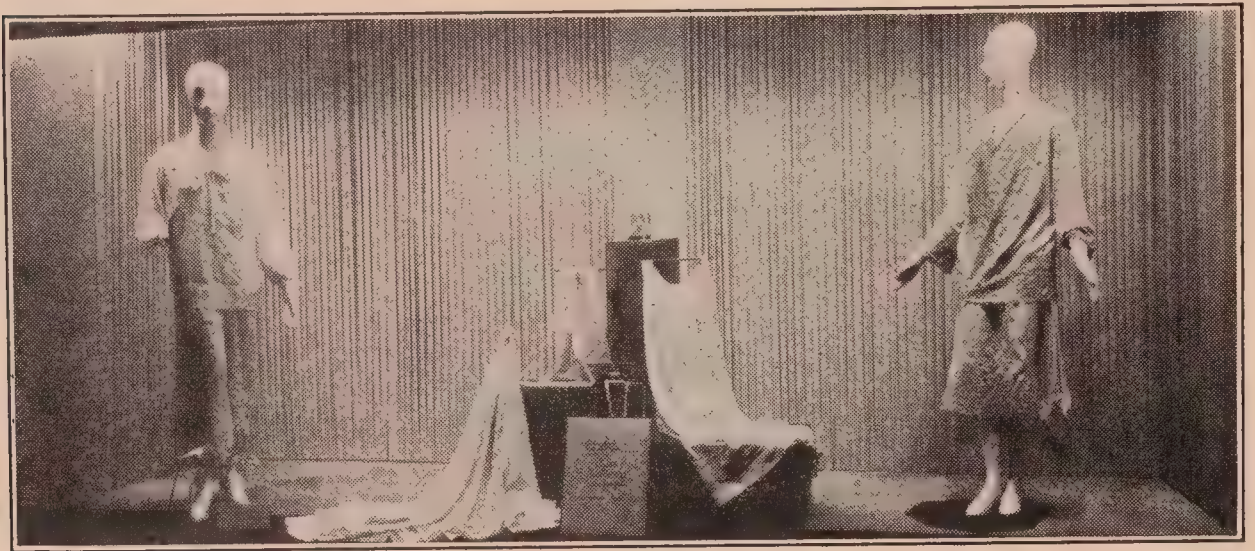
AN ADVERTISEMENT OF A NEWSPAPER TO ATTRACT THE TEXTILE  
TRADES

with strong head-lines, followed by short, concise, forcible sentences in easily read type.

The pictorial phases of the advertisement may consist of either (a) a picture to secure attention and arouse interest in no way related to the advertisement, or (b) an illustration showing the character or uses of the wearing apparel, etc. Of course, the

illustration of uses is usually far more effective than the mere picture.

Advertising of wearing apparel appeals to the emotions of the reader. It has sometimes been abused by extravagant terms, cheap appeals, etc. It is desirable to keep the youthful spirit in advertising; by all means keep it gay, happy, cheerful, dramatic, and



DISPLAY OF DUMMIES ARTISTICALLY ARRANGED

entertaining, but make it informative as well, and helpful to the buyer. It is necessary in some cases to improve its manners and taste and to reduce its units to type and illustrations that belong in newspapers and magazines and not on billboards.

**Advertising Space.** The position of an advertisement has much to do with its success. The space in which an advertisement will be read by the largest number of people who are possible purchasers of the wearing apparel commands the highest price. The back cover of a magazine and the second page inside the cover are desirable and hence expensive.

The reading or text matter of an advertisement is called copy. It should state the characteristics of the wearing apparel that are essential for the consumer to know in order to create a demand for the article. These are known as selling points.

The reading or text matter should be written so that the consumer with the least education or power of comprehension can understand. As suggested in Chapter II, appeal to the senses is the most effective appeal to those with the least power of comprehension.

The appeal must be such as will require as little thinking as possible, but will at the same time create a desire on the part of the

### **COLLAR-ATTACHED SHIRTS**

Collar-attached shirts for general wear are cut on our own generous pattern and made in our workrooms from materials of our own importation or selection. Consequently they are different in appearance from the ordinary—and have been found to have extraordinary wearing qualities. In cheviot, for instance, they are made in white and seven plain colors: blue, tan, stone, brown, pink, green, and yellow.

*Scotch cheviot . . . \$4.00 and \$4.50*

*Domestic cheviot in plain*

*white and plain blue only . . . \$3.25*

AN ATTRACTIVE ADVERTISEMENT FOR THE HIGH-GRADE CONSUMER  
WHO WANTS STYLE AND SERVICE AS WELL AS PRICE

consumer. This is usually done by appealing to his selfish interests. In the case of wearing apparel, it is to the love of distinction — something to make one appear to better advantage, to cover up some defect, or to bring out some strong point.

For the person with a minimum power of comprehension, repetition is very desirable — repetition not only in the same way, but also in different settings.

Retail advertising should be adapted to the location of the store and the class of customers as well as to the product. To illustrate: Advertising and displays on Fifth Avenue should preserve the dignity and high character of the midtown shopping section. Certain stores have cheapened the character of the section and have had an adverse effect on rental values, because of their use of placards, posters, and stickers on their windows and doors, ballyhooing the depression with half-price sales and liquidation announcements. Thus they thwart the efforts that have been put into the development of the Fifth Avenue section during the last twenty-five years and undermine the confidence of shoppers and arouse a distrust of all advertising.

**Varieties of Appeal.** The appeal of an advertisement of wearing apparel varies according to the principles laid down in the discussion in Chapter II. Objective appeal is stronger than the appeal of the printed word. Hence, we might list the various appeals in the following order:

1. The strongest appeal of wearing apparel is when it is seen worn by a person with grace and an attractive personality. This method best displays the style and service values of the clothing.

2. The next most effective appeal would be a wax model of stylish proportions, with the clothing arranged in an effective manner.

3. Clothing displayed in a show case or window on a properly built stand.

4. A model of the wearing apparel in composition.

5. A picture in color showing a stylish person wearing the clothing.

6. A picture in black and white.

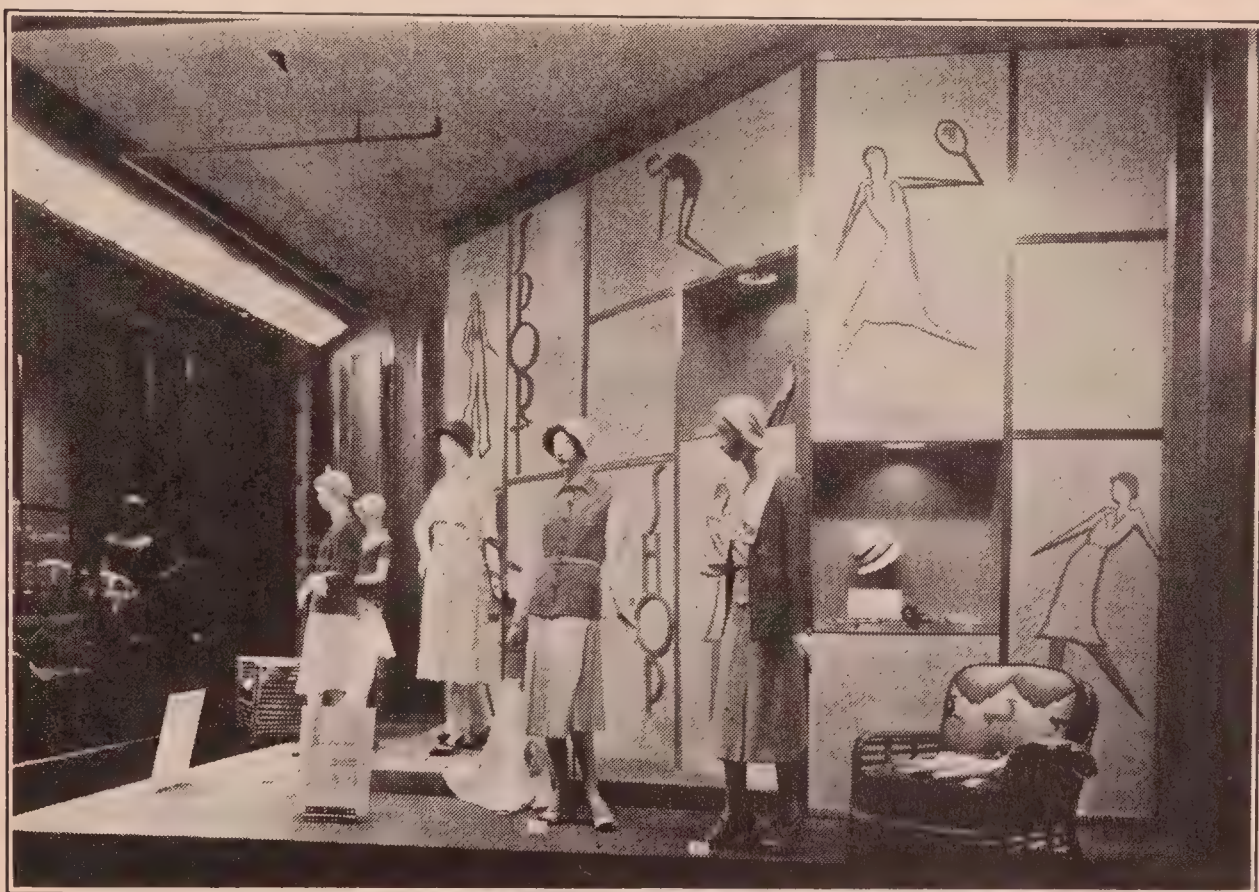
7. Reading matter in color and various sizes of type.

8. Reading matter in black and white.

**Advertising Mediums.** The method of advertising, that is, the medium or means of advertisement, is very important. A study must be made of the wearing apparel to be advertised and the kind and class of people to be reached. To illustrate: One manufacturer may wish to sell direct to consumers, others to druggists,

chain stores, jobbers, wholesalers, hotels, etc. Therefore the advertisement should be planned, and printed in the medium that is read by the most people to whom the advertisement is expected to appeal.

There are various methods of advertising wearing apparel: (a) outside or street-window displays, (b) inside window and



ARTISTICALLY DISPLAYED COSTUMES FOR ATHLETICS

counter displays — form displays, etc., (c) giving away samples, (d) demonstrations in stores or public places, (e) newspaper advertising, daily and weekly, (f) advertisements in magazines of different kinds that circulate among different classes of people that may use the wearing apparel, etc., (g) programs, (h) street-car advertising, (i) highway or billboard display, (j) radio, (k) electric sign, (l) sky display, (m) catalogues, (n) direct mail advertising, etc.

Experience will show and observation on Fifth Avenue will show that practically every one will look at a good window display of wearing apparel, and sometimes as many as one out of four or five who look at the display will buy.

Haberdashery is the most important part of wearing apparel for a man. The framework of the face consists of the collar, necktie,

and shirt, and since the center of a person's vision is the face, the framework either adds to or detracts from the impression made by the face.

**Newspapers.** The newspaper affords one of the most effective forms of advertising. It has been estimated that as much as \$75,000-000 has been spent in a year in newspaper advertising, and that at least one-quarter of it has been devoted to wearing apparel.

Newspaper advertising is a necessity for corporations and industrial concerns in the successful development of their business. The objective of industrial concerns involves making what the public wants or can use to advantage; making it so well that it will give satisfactory service; advertising it and selling it; providing the necessary engineering service if it be a commodity which requires that; guaranteeing its quality; then developing something better, and so on *ad infinitum*.

Newspapers have an important bearing on the relations of an industry with the public. Advertising is, of course, the first and most direct means of impinging on the consciousness of the newspaper reading public. The press is of outstanding importance in the public relations work of most manufacturers, as it supplies thousands of highly selected audiences to which any manufacturer may address himself provided he has anything worthwhile to say.

Adequate public relations work will win institutional recognition for a company; but it is never a substitute for advertising. To employ public relations methods without effective advertising is like driving an automobile with a defective steering gear — you can get somewhere, but not where you want to go.

A recent investigation shows that of a representative group of men 51 per cent read books on an average of slightly less than one a month, 74 per cent read books an average of twenty-five minutes a day, and 98 per cent read newspapers an average of forty-five minutes a day. This applies to rural as well as metropolitan areas, the study asserts, citing an investigation of representative farm homes in which newspapers were read 100 per cent.

While books and magazines vary from 100 per cent to 20 per cent in popularity, according to the education of the reader, newspapers never fall below 90 per cent. The range is from 100 per cent among those with less than eighth-grade training.

An authority on newspaper reader interest says that cartoons, comics, and pictures hold the greatest attention, with sports news ranking first in reading matter. On the other hand, a survey made in 1932 by the Inland Daily Press Association reports that men's interest in the contents of a newspaper ranks in this order: local news, general news, comics, pictures, sports, markets, weather, editorials, society. The pamphlet issued by the bureau points out, after quoting the results of these surveys, however, that men's interest in the news may vary greatly according to occupation. A representative group of business men placed the financial page first in interest and editorials fifth. On the other hand, a group of professional men ranked finance fifth and editorials second.

Variations due to locality are also apparent, a comparison of reading habits of business men in two cities showing local news ranks first with one group and seventh with the other.

Of a group of 100 single men it was found that only 17 spent an hour or more a day reading newspapers, the majority spending five to thirty minutes. Of 100 married men it was found that 57 per cent read the newspapers for an hour or more, while 80 per cent read them from thirty to sixty minutes.

Sixty-four per cent of the men read advertisements, the bureau's pamphlet continues. "Men not only read newspapers but live by them," the study concludes. "They read newspaper advertisements and buy the advertised products."

Examine the newspapers of small and large communities and note the advertisements of wearing apparel. Also note the following characteristics of newspapers:

(a) The local paper is read in almost every family, hence it is an excellent medium for local merchants to use in advertising wearing apparel, etc.

(b) Daily newspapers are kept in a home for a day, may be read quickly by the men, more leisurely by the women. Little time is given to reading advertisements, so they should be simple, direct, with cuts of specialties, and not cover too many specialties in one day.

(c) The price of one of the specialties should be very attractive, in order to draw consumers to the stores.

(d) Papers differ in their readers. Some appeal to workers, others to leaders and the wealthy.

**Magazines.** Examine the monthly magazines and weekly periodicals of general character and note the following characteristics of the advertisements of wearing apparel:

(a) Character of paper — excellent quality — allowing for excellent illustration in color, etc.

(b) People read or allow a magazine to remain on the table or stand from one to two months.

(c) Large circulation among the general public over the whole country, hence an excellent medium for creating a general demand and used by manufacturers of wearing apparel for that purpose.

If You Reduce  
The Quality of Your Cloth  
Or Your Production  
By Even a Small Percentage  
By Using Substitute Repairs  
Or Bobbins or Shuttles  
Not Made By the Builder  
Of Your Looms  
You Will Lose More Money  
Than You Will Save  
Think This Over  
Check It Up

GOOD ADVERTISEMENT IN A TRADE JOURNAL

An appeal by logic to mill manufacturers in favor of standard loom parts.

(*d*) People read magazines in their leisure, hence they are read carefully and the contents considered.

(*e*) Magazines vary in prices and hence each one is read by people of a definite income or standard of living.

**Trade Journals.** Examine trade journals and note that practically each specialty of wearing apparel has a separate magazine called the trade paper. Note the following characteristics:

(*a*) Circulation is small compared to magazines.

(*b*) Readers are intensely interested in the trade gossip, prices, supplies, cycle of business, etc.

(*c*) Hence advertising in a trade magazine will reach every one in the trade — buyers, wholesalers, and jobbers, who of course come in contact with the consumers.

**Mail.** Note the advertisements that pass through the mail with regard to wearing apparel. They usually consist of a letter or booklet arranged so as to attract attention, and are printed in a simple, concise form, setting forth the selling points of the wearing apparel. These booklets are very effective, especially when followed by personal letters.

Many manufacturers of wearing apparel publish an advertising device called a house organ. It is attractively arranged and is adapted to (*a*) agents, (*b*) salesmen, (*c*) consumers, and (*d*) dealers. Not only is information of a general type provided, but special articles on salesmanship, etc., are offered. Since most people judge an organization or writer by the character and style of the printed papers, the “make-up” is important.

Mail-order advertisement is the result of the recently developed mail-order business in wearing apparel. The advertising should consist of catalogues and follow-up letters, attractively arranged, containing the selling points.

Other advertising devices, such as calendars, novelties, handbills, blotters, and free samples are used in advertising wearing apparel.

Street-car and bus advertising is very effective.

Outdoor advertising, such as posters, signboards, and electric signs, is sometimes used for wearing apparel.

The roadside advertisement to be good must be popular with the public. It must be attractive and properly located. The movement for roadside beauty should not cause advertisers to lower their

standards because of economic depression. While large investments are involved in the outdoor advertising business, it should be confined to commercial districts and not disfigure roadside beauty spots.

The manner in which textiles and wearing apparel are arranged for sale and for display is very important. The first impression made by wearing apparel is from the manner in which it is displayed, which also includes the method by which it is arranged or packed for delivery — called packaging. Each of these may or may not arouse our interest and hold attention. Hence the importance of proper display and packaging of textiles and wearing apparel as a means of advertising, arousing our curiosity so that a desire to purchase is created.

**Packaging.** Primarily textile packaging is for a utilitarian end — to protect the goods on their journey to the place where they are to be put to use. When suitably decorated, however, the packaging attracts the user to the goods and acts as a silent salesman to carry ideas of style, quality, standardization, etc., to the prospective consumer on sight. Even utilitarian packaging, such as is used in inter-industry shipments of yarn and piece goods, is coming to have a character designed to distinguish and render more desirable the particular materials so put up.

Packaging of textiles may be divided into two major groups: (1) for inter-industry shipments, that is, from one manufacturer to another; and (2) for delivery into the hands of the ultimate consumer across the retail counter.

The first group comprises principally yarns and piece goods. In yarns, one of the most careful jobs is being done by rayon manufacturers, many wrapping their cones in waxed paper suitably branded on the outside, and one or two have been using other suitable material such as cellophane. Careful wrapping here not only guards the yarn against abrasion and soiling, but aids in retaining the original moisture content.

Piece goods wrapping for inter-industry shipment is usually a simple affair. Except in the finer lines, there is usually no wrapping at all, the pieces being shipped in bales or paper-lined cases. In the finer-materials field, such as silk, it has been found worth while to wrap every piece shipped in paper of a distinctive light green shade,

which serves not only to protect but to distinguish and identify the goods in the stock rooms of cutters or jobbers.

Finishers also have developed distinctive packing. One dye works, for example, wraps piece goods in 60-lb. paper, usually dark blue, and fixes a  $1\frac{1}{2}$ -inch diameter disk of the material itself at the end of the package for ready identification on the shelf. This company delivers sample headends in cellophane envelopes, and tissue paper is used between the folds of napped fabrics. Of course, finishers generally will follow their customers' instructions on put-up, using customers' boards, bands, labels, and tags, when requested. Simplicity, however, must be the rule for commercial work. A package which will unpack with maximum speed and facility gets preference.

There has been little progress in packing raw materials, although efforts along practical lines have wrought a few changes. Cotton fabric baling for raw cotton has gained many adherents in the last 18 months of abnormally low cotton prices. Wool fabric pack for raw wool has not made such headway, largely due to the added cost, though absence of broken vegetable fibers in the wool so packed is a strong selling point to some mills. Better packing of raw silk has been forested by the United States Testing Co., and a new put-up, involving protective wrapping of waterproof paper and cloth under the usual matting covering, has been developed.

So far we have been talking about the work clothes or business dress of textiles. Considerations in selecting such raiment are practical and relatively simple. It is the party frock that gives chance for subtle embellishments to set forth the human contents to best advantage and to display personal charm most effectively. "The party frock" of the textile product is the box or wrapping which takes it to meet the consumer.

Sale has usually been made to the commercial buyer before the goods are delivered to him. The goods rather than the packing make the sale. With the ultimate consumer, sale is usually not accomplished until the goods have been seen. Method of presentation to the consumer, therefore, is a most important element in closing the sale. In this field of consumer packaging there is full scope for the skill of the salesman, psychologist, artist, and

package manufacturer, and it is here that the most distinctive achievements are to be found.

Mills which turn out finished consumer products are naturally those that are outstanding in this class of packaging. These include the majority of hosiery, underwear, and knitted outerwear mills, along with makers of sheets, pillow cases, bedspreads, towels, etc. In a general way there has been a turn from the jazzy packages of a year or two ago to more conservative, quality-suggesting containers. Transparent wrapping materials have played a prominent part in current developments and are used effectively either alone or in conjunction with boxes. Elaborate containers for sheets and pillow cases have been on the market, reaching a climax in one company's box of polished aluminum with mirror cover. In the standard form of boxing these items, the arrangement permits the tying of the pillow cases inside the cover so that when opened both pillow cases and sheets are at once on display. Such packing is used principally for colored sheets or otherwise highly styled items, the sale of which is aided against competition of lower-priced staples by the attractive setting in which they are offered. A towel mill makes an attractive cellophane packing of its towel and bath-mat sets.

Hosiery boxes containing three pairs have become a popular item. Retailers prefer box selling, as it means cleaner stock, easier identification, and simpler stock control. Low-priced hosiery, which is a table item with many department stores, does not call for the *de luxe* treatment of higher-priced goods. A line of folding boxes has been offered for hosiery, which can easily be made into set-up boxes. These appeal through economy of storage space for reserve supply. Harmonizing hosiery bands and box decoration is done in attractive arrangements. Underwear is now on the market in cellophane envelopes on which successful printed effects have been produced. Such packing for shirts, drawers, etc., means fewer markdowns of shop-worn stock.

A report on the paper-box industry shows a well-maintained business which indicates increasing use of shipping and merchandising packages. The industry has been operating recently on an average of 75 per cent of its capacity. Failures have been very few, only six reported for 1931 out of a total of 1250 establishments.

Trade in paper boxes in 1931 declined 24 per cent from 1930, a loss divided as follows by a box manufacturer: 12 per cent to transparent wrapping materials, 8 per cent to wood, 3 per cent to glass, and 1 per cent to other forms. New business is described as encouraging, based chiefly on the reason that attractive boxes have been found to be sales builders by the industries which use them.

**Theory.** The philosophy of style in packaging has been outlined by Irma Marohn, packaging stylist:

1. *Shape.* Suitability of shape to contents; distinction; convenience of shape to use; convenience of size for use; not too high; not too wide. The shape may be tricky if it adds utilitarian advantages, but obvious trickiness only for the sake of being clever is not enough. Whatever the shape it must pack well, without waste, for shipping, and should be economical of paper board stock and production cost.

2. *Design* should describe the contents, if possible, and strive for pleasing simplicity by subordinating the design to the message to be conveyed. All the message that is really needed is the name of the product, if it is well-known, or if the name is not sufficient description, some phrase which describes the contents, plus the manufacturer's name.

Extreme modernism is not recommended for designs of nationally advertised and standardized packages, since such designs would become outmoded too soon. A good package should include the element of timelessness. A well-designed box will tell the same story or present the same central theme on the front and back panels and, if possible, on the two side panels as well. In devising a package family tie-up, the same design or a repetition of a central theme may be carried through logically, starting with the design of the individual package, the display container, probably a display stand, and finally the corrugated or fiber shipping case.

3. *Typography.* The lettering should be simple. The use of distinctive but not freakish identifying lettering which is in keeping with the design and character of the contents is a requisite. Interlocking letters, scrolls, and the use of too many type faces detract from legibility and simplicity.

4. *Color.* Full realization of the value of color has come only in comparatively recent years. Freshness is an essential part of

the appearance of modern successful packages. Color should be appropriate and indicate the contents of the package if possible. Unusual and more subtle background colors will attract attention in contrast with the orthodox reds, yellows, and blues. In designing display containers wherein the individual carton is of great vividness, the use of a cool neutral color such as gray-beige or gray-green will be useful in providing contrast.

The first step in designing a new package is to survey the field of packages with which the new container will be called on to compete. The character of the colors which are vying with it for attention must be noted. The new package should predominate in its field.

**Coöperative Advertising.** In order to avoid waste in advertising, it has been suggested that a coöperative scheme of industrial advertising be adopted. An example of such coöperative action is given by the Cotton Institute.

The cotton industry, by way of demonstrating its recognition of the need for consumer advertising, has for several years through the Cotton Textile Institute been engaged in an industry-wide campaign. In 1932 a sizable fund was subscribed for conducting the special promotional effort incident to National Cotton Week. Advertising in the trade press, direct mail announcements, posters, and other dealer-help material were provided in generous measure by the fund. Retail stores, which have always coöperated wholeheartedly with the central promotions of the Institute, for that week participated to an even greater extent than before.

It is estimated that during the period May 16–21, inclusive, department stores, specialty shops, and other retail distributors spent close to \$2,000,000 in stimulating the sale of cotton merchandise. The greater part of this sum was used for newspaper advertising.

The real significance of these efforts to increase the sale of cotton goods through advertising and publicity lies in the industry-wide coöperation involved. It is made possible by the joint effort and financial support of cotton farmers, brokers, manufacturers, finishers, converters, selling agents, wholesalers, and retailers.

The summary of preparations by merchants and chain organizations for National Cotton Week shows that close to 25,000 department stores, men's and women's apparel shops, drug stores, shoe

shops, grocery stores, and variety stores made cottons the object of an intensive selling campaign, the benefits of which were felt throughout the entire summer.

For example, the Southern Railway set aside a page for National Cotton Week in the new issue of its time tables distributed early in April. Similarly many manufacturers of nationally known products featured the official symbol in their advertising and other promotional material.

About 75,000 National Cotton Week display posters in red, white, and blue were prepared for distribution to the trade. Symbolic of the public's recognition of cotton as "the universal fiber," the poster design carried an outline map of the United States over which was superimposed a cotton stalk with four bolls. The color combination was selected in keeping with the current Washington Bicentennial celebration. The Institute also furnished merchants and others concerned with a broadside of suggestions for advertising and display of all kinds of cotton textiles.

The following comment was made by one of the organizer's of this plan :

National Cotton Week this year is of unusual significance. It represents an aggressive effort throughout America to stimulate greater business activity in a commodity of everyday use and of world-wide importance. Obviously any increase in the demand for cotton products will be of direct benefit to 12,000,000 people whose livelihood is dependent upon the growth, manufacture, or distribution of cotton. Judging by the initial reaction of the retail dry goods trade, which last year spent \$1,500,000 in launching this event, the promotion of National Cotton Week in May should play an important part in the nation's reconstruction program.

Coöperative advertising has proved particularly valuable in such fields as savings banks. These banks have had considerable difficulty in accepting the advertising idea, largely because there is so little available out of the earnings of a bank for advertising purposes. The value of coöperative advertising, particularly from the point of view of the smaller savings bank, is thus apparent.

There are certain disadvantages in coöperative advertising, however. In the first place, it is devoid of the personal touch, and

loses in effectiveness by reason of the very fact that it is group advertising. Therefore, many manufacturers desire to support both types of advertising: the coöperative to call attention in a general way to the value of their products, — such as cotton, — and to supplement this campaign with personal advertising of the products of their own mills.

**Style Promotion.** The subject of styling of wearing apparel is now conducted on a scientific basis. The present styles are the result of a conference of stylist, manufacturer, and selling force. The use of such a styling feature in advertising and salesmanship is illustrated by the following outline:

The function of the stylist is to produce a line so fashion-right that it will sell.

The stores are buying on style and advertising on style, and the consumer in turn purchases on style. What more logical than to sell on style? And this is just what style promotion aims to do. It brings the manufacturer in contact with style sources. It presents the line to these sources in the fashion-right way. A manufacturer may have the finest cloth in the land, but unless the style outlets, the ready-to-wear manufacturers, know about it, it is going to pile up around the mill. Or if it reaches the stock rooms of the garment manufacturer, it is going to remain there unless some one promotes it. It must be brought to the attention of the ready-to-wear manufacturer by some one who can give him authoritative style reasons why he should buy it and explain how he, in turn, can sell the garments made of it to advantage. Even then it must be nursed and followed through to ultimate consumer acceptance.

In just the same way it must be brought to the direct attention of the stores, not only for the piece-goods departments, but for the ready-to-wear, upholstery, and any other departments where it can be sold. In these days of ensembles — ensemble presentations, ensemble selling, and ensemble buying — every product must be coördinated. Coördination of merchandise is, then, another factor in style promotion.

Then there are the many ways in which the product can be and should be brought to the attention of the consumer in order to create a consumer anticipation and interest to be translated into

a buying urge and quick acceptance. This may seem to encroach on the functions of publicity, but publicity and merchandising are closely intertwined and necessarily even more intimately connected in style promotion.

This style promotion must be undertaken by some one who understands conditions in the ready-to-wear industry, who is familiar with the policies and working methods of the retailers, and who has close contacts with the channels leading to consumer acceptance.

The advertising agencies are realizing the vital need for this style-promotion service. All large textile houses have a style-promotion department.

**Business Ethics.** The Federal Trade Commission was authorized by the United States in 1914 to prevent unfair trading, enforce anti-trust laws, and investigate commercial procedure. It consists of five members appointed by the President for a term of seven years.

The chairman of the Federal Trade Commission stated recently that an increasing number of applications for investigation of alleged unfair practices were being received by the Commission. He attributed this development to the pressure of competition during a period of depression. The explanation seems reasonable, since an honest man is naturally more vigilant in detecting and in trying to protect himself against the unfair practices of his rivals when business declines, while the dishonest man has a greater temptation to indulge in unethical practices.

Preliminary inquiries pursuant to applications for complaints made to the Commission during the first eleven months of 1931 totaled 1524 as compared with 1271 for the same period in the preceding year. These statistics show that the conditions give rise to fraudulent advertising and selling practices, and encourage the activities of "false traders, fakirs, and impostors."

The Federal Trade Commission is constantly regulating the use of untruthful representation in advertising, labels, etc. Resolutions clarifying the differences between pure dye and weighted silks and providing for the truthful designation of such differences in invoices, labels, marks, representations, and advertising were

unanimously adopted in 1932 at a conference of broad silk merchants and retailers held under the auspices of the Federal Trade Commission. The following resolutions were advised :

Mixed goods or goods containing silk and other fiber or fibers shall not be designated by a designation containing reference to silk unless there be added to such designation some qualification which shall reasonably indicate that such goods contain fiber other than silk. If the designation of any goods coming within the category of mixed goods contains any reference to silk there shall be added to such designation words which shall reasonably indicate that such goods contain fiber other than silk.

The Commission also voted against misuse of descriptive terms as follows :

“Servisilk” as a descriptive term for an umbrella and its covering is no longer to be used that way, unless such covering be made entirely of silk, according to an order of the Federal Trade Commission to manufacturers. They will not use in their advertising the word “taffeta” or “Swiss taffeta” to describe the material of the covering of umbrellas made and sold by them, unless the coverings be entirely of silk. The commission holds that the word “silk” means to the public at large, as well as to the trade, a fabric made entirely of the product of the cocoon of the silkworm. The coined word “Servisilk” does not affect the meaning of the word silk as given above, the Commission ruled. The word “taffeta” when used to describe the content of a fabric denotes to the public as well as to the trade that the material thus described is entirely silk.

Similar control over labeling fabrics has taken place in France, where the use of the word “silk” is limited to articles composed wholly or in the major part of natural silk, thus taking another step forward with the depositing of a bill on behalf of the French government, under the terms of which use of the word “silk” will be controlled.

For a long time there was agitation for this step, but for the first time official action has been taken by the government to lend its weight to the passage of a bill drawn up along these lines. Under the terms of the proposed bill, it is forbidden to import, to hold with a view to selling, or to offer for sale, or to sell under the name of silk, or under a denomination containing the word silk all yarns, fabrics, or other articles which are not exclusively

composed of products or by-products of the cocoons of silkworms.

In modification of this, however, it is prescribed that a denomination comprising the word silk may be applied to yarns, fabrics, or other articles, providing indication of the mixture is clearly marked in the denomination. Articles not benefiting by this paragraph are those in which the proportion of silk does not exceed 10 per cent of the total weight, or of which the warp or the nap are not entirely of silk. Selvages and braids are not to be taken into consideration when figuring the percentage, it is ruled.

The terms of this bill, it is pointed out, do not prevent the use of any description or branded name not containing the word silk, nor do they prevent exporters from using any terms legally permitted in the countries to which merchandise is shipped.

The code mentioned above has suggested that the following rules with regard to advertising be adopted by the Federal Trade Commission :

*Rule 1.* The making or causing or permitting to be made or publishing any false, untrue, or deceptive statements, insinuations or illustrations, by way of advertisement or otherwise, concerning the grade, quality, substance, character, nature, origin, size, preparation, or service of anything offered for sale, having the tendency or capacity to mislead or deceive purchasers, is an unfair trade practice.

Rule 2 covers what is known as "attacking copy," or copy unfair to competitors. This rule might be adopted as easily as Rule 1.

*Rule 2.* The making or causing or permitting to be made or publishing any false, untrue, or deceptive statements, insinuations or hostile references to or attacks on competitors, competitors' merchandise or prices of service, or competitors' advertising, generally or specifically, having the tendency or capacity to mislead or deceive purchasers, or to undermine in any other way the integrity of advertising itself and its believability on the part of the consuming public, is an unfair trade practice.

Rules 3 and 4 attempt to correct the serious evil of "baiting" and misleading claims of underselling, and should be approved if the integrity of advertising is to be upheld.

*Rule 3.* The making or causing or permitting to be made or publishing any false, untrue, or deceptive statements or insinuations of specific or

general underselling of competitors with the intent or the effect of undermining competition, having the tendency or capacity to mislead or deceive purchasers or prospective purchasers, or with the intent or the effect of injuring a competitor, or where the effect may be to substantially lessen competition or tend to create a monopoly or to unreasonably restrain trade, is an unfair trade practice.

*Rule 4.* The use in advertising of so-called "baits," offering merchandise at less than fair profits and sometimes at cost or less with the intent to lure customers to the store, where little or no effort is made to sell the advertised article, and the advertisement is for the purpose of selling other merchandise at regular or higher than fair profit to make up for the loss on the baited merchandise, having the tendency and capacity to mislead or deceive purchasers or prospective purchasers, is an unfair trade practice.

Rule 5 would probably meet with the greatest opposition, but it goes to the root of the whole matter, and is necessary for the protection of those who have the greatest interest in advertising — the consumer, the producer, and the merchant.

*Rule 5.* Price-cutting that becomes predatory when advertised with the intent or the effect of reducing competition, or the creation of a monopoly, or having the tendency or capacity to mislead or deceive purchasers or prospective purchasers as to the value represented by prices on other articles regularly sold by the advertiser, is an unfair trade practice.

**Price-Cutting.** Many merchants claim that the cause of unethical advertising is price-cutting. Underselling claims are not new. As early as 1868, a large dry goods store advertised: "As to our prices, we guarantee them 10 per cent lower than the lowest elsewhere, or cash handed back if shown to be otherwise."

This was in the days of haggling, before fixed prices came generally into storekeeping. The storekeeper was seeking to show that fixed prices, which he was putting into effect, were lower than haggled-over prices. Later the store abandoned its 10 per cent lower guarantee as business adjusted itself to the fixed-price basis, and competition made it impossible for any store to substantiate such a claim.

The root of practically all misleading, deceptive, and unfair statements in retail advertising is to be found in what is termed

predatory price-cutting — that is, the denial to competitors of the right to sell merchandise at prices as low as those of the one advertising.

In the final analysis, predatory price-cutting is just what the phrase implies, destructive price-cutting, destructive in its results both to advertising and to business generally.

Price-cutting, when predatory, is used as a weapon of attack on all competitors. By underselling on articles easily identified because nationally trade-marked and advertised, it seeks to give the impression that all prices are lower. It aims to undermine competition — to build up by tearing others down. In this use it is vicious and certainly should be classed as an unfair trade practice.

Predatory price-cutting, by its very nature, must lose gross profit on the articles whose price is cut and sometimes results in actual loss below any profit when the article is sold at less than cost.

Advertising and selling policies are emphasized in recommendations made by the Committee on Unfair Practices in Advertising and Selling of the Affiliated Better Business Bureaus, Inc. :

Believing it to be of paramount importance to the economic and social welfare of the American people that practices in business should be more clearly established and firmly maintained on a plane of fairness to competitors and to business as a whole, this committee proposes that business men themselves shall abandon and condemn any practices in advertising and selling merchandise, services, securities, and property of all kinds, which may have :

(a) The capacity or tendency to undermine public confidence in advertising announcements or other selling representations generally.

(b) The effect of injuring unfairly the sales or the goodwill of a competitive product or service. To this end the following practices are considered to be unfair and against the public interest :

(1) Misleading advertising : The use of, participation in, publishing, or broadcasting of any untrue, deceptive, or misleading statement, representation, or illustration in an effort to sell any merchandise, service, security, or any property or thing of any kind is an unfair and uneconomic practice.

(2) Unfair competitive claims : The use of, participation in, publishing, or broadcasting of any statement, representation, or implication which might be reasonably construed to lead to a false, or incorrect, conclusion

in regard to the goods, prices, services, or advertising of any competitor or of another industry is an unfair and uneconomic practice.

(3) Disparagement of competitors: The use of, participation in, publishing, or broadcasting of any statement, representation, or insinuation which disparages or attacks the goods, prices, service, or advertising of any competitor or of any other industry is an unfair and uneconomic practice.

(4) Underselling claims: The use of, participation in, publishing, or broadcasting of any statement or representation which lays claim to a policy or continuing practice of generally underselling competitors is an unfair and uneconomic practice.

(5) Bait, offers: The use of, participation in, publishing, or broadcasting of "bait" offers of merchandise wherein the prospective customer is denied a fair opportunity to purchase is an unfair and uneconomic practice.

(6) Deceptive statements accompanying cut prices: The use of, participation in, publishing, or broadcasting of statements referring to cut prices on trade-marked merchandise or other in such a manner as to lead the public to believe that all other merchandise sold by the advertiser is similarly low priced when such is not the fact, is an unfair and uneconomic practice.

The Committee invites the coöperation of the press and other channels of public information in making these recommendations widely known to business groups and to the people throughout the country in order that an enlightened public opinion may favor and demand the establishment and observance of these constructive proposals.

**Standards Set Up.** Reputable retail merchants have long realized the value and importance of fair dealing with their customers. They know that without the confidence of the public their advertising will not be believed and will not be productive. And so they have set up for themselves practical measures to prevent errors in their advertising. They have developed "standards of practice" — to tell the truth about furniture, to tell the truth about furs, to tell the truth about the contents of fabrics — silk, wool, cotton, rayon, linen, camel's hair — and all other merchandise advertised and sold by them to the consuming public.

Much progress has been made toward eliminating unfair practice in advertising, as is indicated by the report of the Better Business Bureau of New York City, recently published. Standards have

been adopted in whole or in substance by retail groups in many cities, and newspapers and advertisers are coöperating in good measure. All of this adds to public confidence and to advertising productivity.

The next forward step which seems to be taking shape is the stating and phrasing of advertising that is honest, accurate, and fair, so that the consumer will not be disappointed in the product through having been led to expect more or better goods.

**Undermining Advertising Tactics.** The following represent unfair and misleading advertisements :

1. One advertiser slurs the other and belittles his merchandise or his statements about that merchandise. This kind of undermining tactics lessens faith in all advertising and has become one of the most troublesome bones of contention in magazine censorship of copy.

2. Another form of misleading advertising is the insincere testimonial, often purchased by the advertiser, a practice which now, happily, is on the wane.

3. The misuse of scientific authority in supporting advertised products, or their use, is another evil which it is more difficult to watch, because of the lack of technical knowledge on the part of the publishers. But there has been a good deal of it, much to the chagrin and disgust of scientific men. This is a subtler form of misuse, which the public is not so quick to detect, but which eventually is bound to react against all advertising.

In the retail field the misuse of advertising is probably greatest because competition is closer at hand, more immediate. Sales are expected the very day the advertising appears. Results must be quick. Bargains appeal to a shopping group that goes from store to store as the appeal draws them.

There is much reason, therefore, for the fact that retail advertising is more intensive, more competitive, more aggressive, more dominating, and that stores are no longer satisfied with 48- or 64-point type.

**The Quality Control Plan.** The consumer is demanding more and more reliable information on labels of textiles and wearing apparel. Manufacturers are beginning to realize this fact. Thus the Silk Association is recommending that a tag be placed on each

silk garment stating it is a "pure dye fabric" or a "weighted dye fabric."

The manufacturers call the method or use of the label stating the quality of the fabric the Quality Control Plan. It has been used very successfully in the rayon lingerie trade. To illustrate: Before the use of the control plan, the buyer of the lingerie in a certain department store in 1930 did a business of \$750,000. In order to keep up with competition he sold some skimmed merchandise of too light a cloth. The year 1931 he did less than \$200,000 of business. This loss was due to the false impression that some of the consumers obtained about rayon lingerie from the purchase of the low-grade article.

The Quality Control Plan is of great assistance to the consumer. It is often difficult to detect cloth made of inferior yarns. Under the control plan the rayon yarn is tested in the best rayon laboratories of the country, and a constant check is kept on the finished product. This label has increased the sale of the higher-priced goods over the medium or lower-priced items. In some cases, sales have increased 400 per cent in a department by use of the Quality Control Plan.

Continuing the message of quality control to the consumer, still another merchandising idea has been developed for the coming year. This idea centers around the instruction of the consumer in regard to washing Tested Quality garments.

A similar emphasis on quality is being made in the rug industry. Adoption of the quality standard label, created, owned, and controlled by the Institute of Carpet Manufacturers of America, Inc., to be used upon all fabrics, has been approved by the members of this manufacturers' organization, representing not only all the leading firms in the industry, but also a very high percentage of the total production of American-made carpets and rugs. It will be introduced first in the field of rugs.

The label will be illustrative of the weaving of the fabric, and will be so registered under the law as to protect its use through the Institute. It will include the following statement over the name of the manufacturer producing the fabric:

We guarantee that this fabric conforms to the Institute Specification as issued by the Institute of Carpet Manufacturers of America, Inc.

The adoption of the label marks the initial step in the Institute's program to assist the industry as a whole in its desire to uphold and maintain quality in the manufacture of woven floor coverings, at a time when all manufacturers are hard pressed to do something about the appearance of extremely low-priced and consequently low-quality goods in their respective markets. It is especially fortunate that the rug and carpet manufacturers are now carrying out their determination.

Labeling fabrics will mean that the individual manufacturer is proud of the workmanship involved, and the consumer will thus have a permanent and satisfactory guarantee of quality. Since fabrics with the Institute label attached will have to be quality products, the consumer will feel free to purchase such floor coverings, and soft-surfaced sales should increase in grades bearing the Institute label.

The adoption of an Institute label and an effort at standardization of quality are coincidental. The label action is the result of the standardization effort carried out over a period of several months. The work of the technical committee which has had this in charge was carried through, accompanied by technical tests and very careful studies, over a period of months. As a result, a specific standard has been set up, below which any fabric will not be allowed to carry the Institute label.

It might be well to point out that, in taking the action in respect to this whole label and standardization procedure, manufacturers not only wish to protect the manufacture, but also insure the general use of and universal confidence in the quality of carpet and rug fabrics made in the United States. It is an important and far-reaching move on the part of the industry, not only for its own benefit, but also for the benefit of those who buy and distribute its products. Moreover, it is a practical demonstration of an effort within an industry to support constructive and organized planning.

**Advertising Ethics.** Codes of ethics have been adopted by many groups, trade organizations, etc. to govern competition, advertising, and other trade practices. Such a code of ethics was recently drawn up and adopted by representatives of some of the leading stores and advertising agencies of the country. The code has the laudable purpose of eliminating cut-throat competition,

dishonest claims in advertising, and other practices that in the long run react against business generally.

Its sponsors believe that it is particularly needed during this period of uncertainty, when the temptation to get business by doubtful tactics is stronger than in seasons of normal prosperity. Its success will depend largely on the support given it by the majority of business houses, and by the discrimination of the public in buying from those concerns which have always maintained high standards toward customers and competitors alike.

Honesty and fair play are more necessary now than ever. A formal code of ethics is no guarantee of these qualities, but at least it is a sign that the business community is doing what it can to promote them.

The happiness, prosperity, and development of any community, state, or nation depend upon the character and high standard of ethics of its members. Therefore, it is in the interest of efficiency that every community, state, and nation maintain a high standard of ethics for its members. Society is never perfect; we may approach from decade to decade an approximation to the ideal condition of efficient society, but we have never reached the point where every one is one hundred per cent efficient in his duties and obligations to society.

The following is an outline of an advertising program to improve quality wearing apparel :

A broad, educational campaign to promote the sale of styled merchandise of better quality and values, and to improve trade practice has been launched by the National Quality Maintenance League.

The program proposes the use of motion pictures, radio, fashion exhibits, and the coöperation of important fashion and trade publications that are allied in the movement. The League includes in its membership manufacturers of woollens, silks, velvets, millinery, handbags, hosiery, and underwear, as well as editors and educators. The full coöperation and participation of leading retail stores throughout the country will be sought in the undertaking. The objects of the League, as set forth in the by-laws adopted, are as follows :

To encourage the establishment and maintenance of high standards of quality in style merchandise.

To seek by coöperation among its members continuous improvement in design and quality in style merchandise.

To inform the public of the essential desirability and the intrinsic value of better quality in style and merchandise.

To use all means that may be offered for the prevention of falsity in advertising and selling, and for the discouragement of unfair trade practices which tend to tear down or destroy high standards of quality, or which tend to deceive the public as to values or desirability or quality in style merchandise.

To prevent unauthorized or unfair copying of original ideas or designs in individual manufacturer's products.

To use all means that may be offered for the promotion of ethical standards in American business and generally to do such acts and things as may serve to accomplish any of the aforementioned objects.

The principal purpose of this organization should be to educate the buying public of the country regarding the basic values of good quality and good style in merchandise. This education should be directed toward persuading the public to purchase merchandise on the basis of quality and service rather than of price.

**Advertising Campaigns.** The following description shows how a campaign may be conducted for the increase in sales of boys' and juvenile clothing, through a process of improving the quality, and making the public aware of this need for improvement.

A preliminary survey proved the urgent need for immediate and active steps to revitalize and develop the boys' apparel industry. It also showed the steady decline in production and sales by the manufacturers; a general attitude of carelessness and neglect on the part of the average retailer toward his boys' wear department; the scarcity of novelty ideas, proper styling, and good fabric for boys' clothing in the textile field; and the widespread and growing lack of uniformity and style in the wearing of boys' apparel, all of which contributed in a large measure to the alarming depression in the industry in 1931-1932. Recent statistics published by the Department of Commerce show that in December of 1929 the production of boys' suits was less by 13,602 than for the same period in 1928. The production of boys' overcoats, reefers, and light coats showed a decrease of 18,288 for December, 1929, as compared with December, 1928. These figures were based on the output of 850 identical establishments. It clearly showed a very

definite and real need affecting every branch of the boys' clothing industry.

The promotion campaign, therefore, has been planned to remove these weaknesses in the industry by direct promotional activities. It has been planned to awaken the American boy to a clearer sense of the importance of his clothes, and the importance of well-styled, good-quality clothes, and at the same time to arouse his mother to a consciousness of the necessity of purchasing good quality, well-styled clothes for him; and in turn to help the millmen, manufacturers, and retailers to meet this potential demand with the proper merchandise.

The textile millmen should make an analysis of their own situation and strive to maintain a high standard of merchandise and to style fabrics in weaves, patterns, and weights suitable for boys' wear. The retailers should agree to give their boys' wear departments greater prominence in their store arrangement and window display and to promote these departments through improved merchandising and advertising methods and also to improve their sales personnel in these departments.

**Trade Associations.** All branches of wearing apparel have organizations of manufacturers or selling agents (distributors) for the purpose of promoting the advancement and prosperity of the trade interests by means of interchange of ideas, by gathering information, by harmonious action, by the development of industrial art, and by all other proper and appropriate means; and to eliminate unjust and unlawful exactions, misbranding, and unfair practices; to establish and maintain fair and uniform customs and usages; to collect, compile, and disseminate facts and information; to coöperate with the government in carrying out its functions or in enforcing laws relative to the trade; to promote friendly intercourse among those engaged in the particular trades and industries and related activities.

Any person, firm, or corporation engaged in the trade or industry, or a related trade or activity, is usually eligible for membership.

These associations have permanent headquarters in charge of a paid secretary. They have done much to raise the standard of ethics, have eliminated many trade abuses, carried on campaigns to educate the public concerning the artistic and material values

of wearing apparel, and in addition have done much to increase the quality of raw materials, manufacturing processes, and designs.

One of the best organized and most efficient trade associations in the textile industry in America, if not in the world, is the Silk Association of America. It has done much to develop the silk industry in this country and abroad. It has engaged in scientific research and has been the means, through its executive secretary, in developing all forms of testing.

The following description will show how it has been active in developing a strong trade practice in the buying and selling of raw silk. Due to style developments and changes in manufacturers' dyeing policies the need has long been felt in the trade for rules to govern transactions between buyers and sellers of raw goods. In 1927 a committee was appointed to draw up Raw Goods Rules and the results of their compilation were presented to and approved by the board of managers at their meeting in September, 1928.

The provisions of contract governing the purchase and sale of finished goods approved by the Silk Association of America, Inc., on January 4, 1928, are as follows :

1. *Credit.* The seller or his factor may at any time limit or cancel the credit of the buyer as to time and amount, and as a consequence may also defer or reduce in quantity any delivery under the contract, and the merchandise herein described or such part as the seller may offer from time to time to deliver shall at seller's option be payable in cash upon offer of delivery, which the buyer agrees to pay. If the buyer defaults in any such cash payment for ten days after any such offer to deliver has been made, the seller may at his option hold the goods offered for delivery for buyer's account who shall be liable for the purchase price therefor or sell the same for the account of the buyer, but at his risk and expense, giving credit for the amount realized therefrom upon the purchase price thereof, without being liable to the buyer for any profit upon such resale. If deliveries are to be made in installments, a default in such cash payment by buyer upon offer of delivery of any installment as herein above provided may, at the option of seller, be deemed a default of the contract, for which default buyer shall be liable. Upon any of the aforesaid defaults by buyer, seller may at his option cancel the contract in writing. In no event shall the buyer be released from his liability hereunder unless the contract be canceled by the seller in writing.

2. *Strikes and Casualties.* Seller shall not be liable because of late or non-delivery due to accidents, strikes, fires, or other causes beyond his control. If by reason of any of the above causes, the production of the seller shall be partially or wholly curtailed, then the deliveries may be either proportionately or wholly suspended as the case may be, and resumed upon the removal of the difficulty and continued until the entire quantity purchased hereunder has been delivered provided that if such delay in delivery of any portion, by notifying the seller in writing to that effect. If the total period of delay in delivery of any portion due to any of the above causes exceeds 90 days, seller shall have the right to cancel any or all undelivered portions under the contract.

3. *Deliveries.* The acceptance of shipment by a railroad or other common carrier shall constitute a delivery. Shipments made within seven days after specified date of delivery shall constitute a good delivery or tender made within seven days after specified date of delivery shall constitute a good tender. Where agreed delivery dates cover several months, without stating specific quantity for each month, the delivery shall be deemed good only if made in substantially equal parts for each month specified. Where deliveries are to be made in installments, whether of specified quantity or not, each installment and each part delivery shall be paid for in accordance with the terms of the contract regardless of claims by either party relating to any other delivered or undelivered merchandise. Where the buyer has declared or manifested an intention that he will not accept delivery of merchandise in accordance with the provisions of the contract, no tender of the merchandise shall be necessary, but seller may, at his option, give notice in writing to the buyer, that seller is ready and willing to deliver in accordance with the provisions of the contract, and such notice shall constitute a valid tender of delivery.

4. *Claims and Allowances.* Goods shall not be returned nor allowance made nor claims made by the buyer for defects ascertainable upon inspection after ten days from delivery of the goods to the buyer either at the contract place or to any other place or person named by the buyer, or after ten days after title has passed by appropriation or otherwise, nor after goods have been cut or otherwise changed from the original condition. Goods shall not be subject to inspection by the buyer before taking possession of same or delivery, and giving written receipt therefor.

When the contract provides for the delivery of pieces in lengths or cuts, a variation of not more than 8 per cent either way from the specified yardage in any particular piece, shall be deemed a compliance with the contract, but the variation from the total yardage under the contract shall not exceed 3 per cent either way.

5. *Rejections and Replacements.* Goods rejected by the buyer may be replaced by the seller within fifteen days after rejection has been agreed to by seller. If any dispute arises, it shall be settled by arbitration in accordance with the rule on *Arbitration*.

6. *Warranties or Modifications.* No warranties or modifications of the agreement shall be binding unless signed by the party against whom any claim arising under the agreement is made.

7. *Receipts.* Receipts for delivery of merchandise shall be evidence of delivery and acceptance only and shall not constitute a waiver of modification of any of the terms of the contract.

8. *Acceptance of Order.* This order shall become a contract only when signed and delivered by the buyer to the seller and accepted in writing by the seller, or when buyer has accepted delivery of the whole or any part of the goods herein described.

9. *Deferred Assortments — Default — Appropriation.* Where a contract covers the sale of goods, in which colorings, designs, patterns, or assortments are not determined at the time of sale, seller will submit colorings and designs for acceptance, from which buyer agrees to make selection or furnish assortment within a reasonable or specified time. In the event of the buyer's failure so to do, the seller at his option may make the selection or assortment according to his judgment and appropriate the same in the finished state or at his option in the raw, at the full contract price, to the contract for the account of the buyer. Such goods appropriated in the raw shall, at the request of buyer, be converted by seller as provided in this contract without further cost to buyer. Failure of buyer to assort within a specified or reasonable time will not release the buyer from his contract.

If the buyer fails to take delivery or defaults in any provision of the contract between him and the seller, all goods contracted for, finished or in the raw, whether assorted and selected by the buyer or by the seller, and appropriated to the contract, shall, at the seller's option, be billed at the contract date of delivery at the contract price and be payable according to the terms and conditions thereof or be payable in cash, for which the buyer agrees to be liable and the goods held for the buyer's account and risk, or the seller may cancel the contract in writing. The agreement shall be deemed the buyer's assent and the buyer does hereby assent to the appropriation by the seller, at the contract date of delivery, at the seller's option, of all goods deliverable under the agreement. Title to the goods so appropriated shall then pass to the buyer.

10. *Arbitration.* All controversies arising out of or relating to the contract shall be settled by three arbitrators in accordance with the rules

of the Silk Association of America, Inc., each of the parties to select a third. At least one of the arbitrators shall be an official arbitrator of the Silk Association of America, Inc. The award shall be final and binding upon all parties.

### QUESTIONS

1. (a) What is advertising? (b) State its importance and economic justification.
2. What are the characteristics of an advertisement of clothing?
3. State the advantages of advertising.
4. State the types of advertising and the advantages and disadvantages of each type.
5. Give examples of branded and non-branded textiles.
6. Explain some of the abuses of trade names.
7. (a) What constitutes successful advertising? (b) How may one determine the success of advertising?
8. Give a list of means or devices for arousing attention in advertising.
9. State the essentials in developing advertising space and illustrate.
10. What are the devices for making successful appeal in advertising?
11. State the advantages and disadvantages of different kinds of advertising mediums.
12. What are the special methods of advertising through (a) mail, (b) house organ, (c) calendars, (d) novelties, (e) handbills, (f) blotters, (g) free samples, (h) outdoor advertising, (i) sign boards, (j) street car, (k) electric illuminated signs.
13. (a) What is meant by coöperative advertising? (b) Give some illustrations, and state the advantages and disadvantages.
14. Give illustrations showing the effect of campaigns for advertising wearing apparel and style promotion.
15. (a) What is the Federal Trade Commission? (b) State its duties.
16. Why are business ethics important in advertising?
17. State the necessity of correct labeling.
18. Name some of the abuses of advertising and also the code of ethics of good advertising.
19. State the value of trade organizations and also their influence in upholding high standards of ethics.

## CHAPTER XVI

### DISTRIBUTION OF THE SOCIAL INCOME

**Definition.** As a result of the combined efforts of the various factors of production — land, capital, labor, management, and the state — society receives every year a vast supply of goods and services, which contribute to the welfare of its members. This total supply of goods and services is called the *social income*. The way in which this income should be distributed to the various factors that have aided in its production is one of the greatest problems of modern times.

In order to make the discussion clearer, this social income may be classified roughly by the various types of products. For example, the total of clothing and textile products constitutes the wearing apparel income of society.

Any analysis of the clothing industry will show that five factors contribute to the production of a commodity such as a woolen suiting. (1) Land supports the sheep that supply the wool; it furnishes a building site for the mill and for the establishment in which the product is sold; it may furnish water power for the mill. (2) Capital funds are necessary for purchasing raw materials, paying labor, etc.; capital goods in the form of machinery are required for carding, spinning, weaving, and finishing the material. (3) Labor is essential to carry on the processes of cleaning, spinning, weaving, and finishing the cloth and making it into a suit. (4) The production is supervised and planned by technically trained business men who assume the responsibilities and risks of the business. (5) The state contributes by providing protection of property, health, etc.; it provides education for workers, etc.

Similarly, in the knitting industry we can recognize the same five factors of production, working together coöperatively to produce a commodity such as hose. (1) Land — to produce the

cotton, as a site for the cotton mill and the knitting mill. (2) Capital — supplied by the capitalist. (3) Labor — the workmen who perform the actual processes of manufacture under the direction of the business manager. (4) The business man — or technically, the entrepreneur — who supervises and organizes the production in the mill. (5) The government or community which promotes, regulates, protects, and otherwise facilitates the production.

We saw in an earlier chapter that each factor in production receives in return for its contribution a certain portion of the social income. That portion returned to land is called *rent*; that portion belonging to capital is called *interest*; labor receives its reward in the form of *wages*; the entrepreneur receives his reward in the form of *profits*. The contribution of the government entitles it to a return in the form of *taxes*.

**Importance.** These five factors will be found in every type of production of commodities, although they may not always be represented by distinct elements. Thus in a small plant the business man may supply his own capital; indeed, he may in some cases act as a laborer in his own establishment. In such cases the business man is performing several functions in production and represents two or more factors as outlined above. Since each factor is entitled to a certain return from the social income, we may find the business man in such instances receiving not only the profit from the business, which is that part of the social income that is reserved for the entrepreneur, but he is likewise entitled to interest on the capital invested. If he owns the land on which the factory is located, he is also entitled to a certain allowance for rent, which is the legitimate return to the land for its contribution in production.

We must remember that the social income is not in reality money, but is the total supply of commodities and services made available to society. Thus the wearing apparel income consists of the large quantities of cotton cloth, wool and worsted cloth, silk and rayon products, costumes, etc. These commodities are marketed, and in exchange the consumers give money, the medium of exchange. Thus the various factors receive their return in the form of money. With this money they can proceed individually to purchase such commodities as they need, pay their rent, personal

taxes, etc. Actually the extent to which each factor shares in the social income must be measured in terms of the purchasing power of the money received in return for the particular contribution to production. Money is merely a convenient means for distributing the social income.

Just as the entrepreneur is responsible for the organization and responsibilities of production, so he is responsible for the distribution of the products of production. Thus when the commodities and services of the wearing apparel income are sold in the market, and the market value in terms of money is to be distributed among the various factors that helped to produce them, it is the business man or entrepreneur who regulates the shares to be returned to the various factors. Justice and fairness would demand that each factor receive its exact share of the total amount — *i.e.*, that each factor should be rewarded according to the contribution it has made to the total product.

Obviously, there is no exact or practical method for determining mathematically the exact value of the various functions in production. Such contributions can be measured only approximately. As a result, it is natural for each factor to try to secure as much as possible for itself. If one factor receives more than its share, then one or more other factors will receive less than their share. Hence the effort of each factor, particularly capital, business men, and labor, is to secure as much as possible, even at the expense of the others. This struggle accounts for the intense bitterness and the frequent strikes and misunderstandings that take place in the clothing centers, textile mills, etc.

Of course, all factors should remember that the more wealth in wearing apparel, etc., that is created, the more there will be to distribute, and any attempt to reduce the clothing or social income will reduce proportionally the amount to be distributed.

**National Wealth.** According to a current study of national wealth emanating from the National Industrial Conference Board, the wealth of the United States in 1928 was \$360,100,000,000. The census figure for 1912 was \$186,300,000,000, and for 1922, \$320,800,000,000, an annual gain of \$13,450,000,000 for the intervening ten years. The average annual increase for the six years from 1922 to 1928 is thus mathematically about \$6,550,000,000.

The Board's definition of national wealth includes all tangible physical assets, embracing notably land, and excludes credits and currency in the form of paper. On this broad basis, realty in the form of land and improvements forms more than 50 per cent of the total. The figure is \$198,100,000,000, of which \$23,000,000,000 is tax-exempt government, church, charitable, and educational property.

Railroad, public utility, shipping, and canal properties represent \$39,500,000,000, of which a tenth is in land. Farm and factory equipment, the first comprehending live stock, is placed at \$27-200,000,000. Merchandise, crops, and industrial products are shown at \$40,600,000,000. Furniture, clothing, jewelry, and other things classed ambiguously as "personal property" are valued at \$44,700,000,000, or 65 per cent more than the entire equipment, including live stock, of farms and factories. Per capita wealth was \$3000 in the same year.

**National Income.** The annual income per inhabitant is greater in the United States than in any other country in the world. The comparative incomes of the leading nations of the world in 1930 were as follows :

<i>Annual Income of</i>	<i>Dollars for Each Inhabitant</i>
Italy.....	\$115
Great Britain.....	409
Belgium.....	171
Russia.....	100
Sweden.....	265
Germany.....	190
France.....	201
Switzerland.....	389
United States.....	700

In 1929 the per capita income in this country was somewhat more, or \$780. Because of depression conditions commodity production was substantially less in 1930 and the per capita income was reduced to \$700.

**Distribution of the National Income.** While figures of national wealth and national per capita income are interesting for comparison with other countries, they furnish very little information about the actual distribution of the social income in the United

States. This income is not divided on any proportional basis, but is apportioned unequally among the various factors of production according to their contribution to its production. Since the entrepreneurs of American industry are actually the central distributing agencies for the social income, we find the amounts accruing to the different factors varying widely from time to time, and in different industries. Since each factor is striving to receive as large an amount as possible, the final distribution may bear only an approximate relationship to the actual contribution made by each. For this reason we find that the distribution of the social income is one of the most important problems faced by modern society.

Many statesmen, economists, and successful business men feel that our depressions, particularly the one from 1930–1932, are due to the fact that wages as a whole do not rise in proportion to the reward to capital during periods of prosperity. This is a doctrine that adherents of the socialist party or Marxist school of economic thought will no doubt applaud enthusiastically, but if it is a correct statement of fact, non-socialists should not for that reason reject it. If the working classes of the United States have, as asserted, been denied an adequate share of the national income, and if this discrimination is responsible for the piling up of huge profits, which have encouraged investment in unsound, unprofitable, and speculative enterprises, then it is important to recognize it.

There is no doubt that a large part of our troubles is due to “selfish and opportunist groups,” in the distribution of that income. National income, in the future, must be distributed differently. In good times during the World War there was a big income, about \$90,000,000,000, of which workers were getting \$60,000,000,000, or about  $66\frac{2}{3}$  per cent.

Naturally, in times of depression wage reductions must take place. Many reductions took place in 1930–1932. The only question is as to the proper measure of such decreases. These should not exceed the decline in the cost of living. It may be that reductions of a lesser amount will be effective. Furthermore, it may be appropriate that wage reductions shall be accompanied by pledges to restore the old scales *pro rata* with advances in the cost of living.

In the end, labor profits only as capital profits, and labor can afford, even less than capital, to risk the blighting effect on business recovery that will result from attempts to maintain wage rates that begin to appear hopelessly out of line with the new level of prices.

**Ricardo's Iron Law of Wages.** Ricardo's iron law of wages expresses the theory that average wages tend always to reach the lowest amount necessary for sustenance in order to maintain existence and propagation. Because of the excess of workers, three or four applying for the same position, thus producing an excessive competition, it would follow by Ricardo's law that wages would tend to become lower and lower until they reach the lowest point consistent with existence. This situation would apply particularly to the group of unskilled laborers who represent the largest number of workers.

Actually, Ricardo's law is based upon false suppositions — unlimited competition in industry and supreme rule of supply and demand. Any theory which regards man only as a hired animal is essentially false. Society has provided laws that protect the weak against such unjust oppression by the strong. When wages become too low, society steps in and sets a minimum wage for unskilled labor in the various industries.

The question of how to determine the wage or salary of a worker is a very serious problem and a complex one. The total wage may be determined roughly as the difference between the value of what a workman produces and the expenses of production (including interest on investment, rent, etc., and a compensation to the employer for his labor in production and exchange). The average amount of this difference per year or per season may be a safe method of determining that wage. Of course, the individual wage must be based upon approximate equality between what is given and what is received by the workman. This should in all cases be sufficient to meet a decent standard of living for the unskilled worker. The wages or salaries of other types of labor are determined more or less by the law of supply and demand.

We have seen that people differ greatly in their abilities and hence in their contributions to production. Some are able only to perform certain operations under guidance; others can supervise the operators to see that the work is done efficiently and without loss of time. While the detail work of production must be

done by unskilled and skilled workmen, at the same time it is necessary to have leaders who will plan and organize the work. Otherwise, the total production and the workers' share in that production will not equal the highest possible amount. Some men and women with exceptional ability may be called the generals of industry; others with somewhat less ability and training may be considered captains. Under these we find lesser commissioned officers, and the large remaining body of privates.

Salaries and wages are thus graduated upward from the minimum wage for the least skilled workers to the higher-skilled supervisors, designers, stylists, overseers, superintendents, etc., in the clothing and textile industries.

**Types of Workers.** The textile and clothing industries are able to utilize workers of various types of mentality, ranging from the genius with his power of leadership to the imitative unskilled worker, with a negative personality, whose only asset is physical power — the ability to push and to drag under supervision. Between these two extremes are all types of workers — salesmen, artists, chemists, foremen, etc. Each type is useful in certain work, and the industries thrive best when there is a good supply of all types of workers properly trained to perform the various duties from business management to machine tending, designing, etc.

The amount of detail work in textile and clothing production is very great. Much of the work in the clothing trades after the fabrics have been cut consists in assembling and stitching the parts together. The character of the work is very simple and naturally can be performed by recent immigrants, children, and housewives who wish to make additional income for the family. Contractors or jobbers take the cut fabrics and have them assembled and stitched on a contract basis.

It may be worth while to enumerate the different types of workers employed in industry and to state the characteristics of each class.

We have seen that every organization is divided into two departments: production (manufacturing) and the exchange or marketing (selling) phases. Production is carried on by an organization varying in size from small to large. This organization comprises a manager, agent or superintendent, overseers or foremen, section

or second hands, and workers. The large establishments have, in addition, designers or draftsmen, testers or chemists, shop supervisors, and sometimes research engineers.

The manager or superintendent may or may not come from the ranks. In the past it has been possible for men lacking technical training, but possessing good common sense and business capacity, to rise to this position. This is not true today in many engineering establishments and large factories. Often the superintendent is a technically trained man who entered the industry direct from school as an assistant to the manager or superintendent. To qualify for this position a man must have a great deal of foresight and will power; he must have initiative, an analytical mind, and executive ability — that is, he must be able to see clearly a problem and its solution, and must have the ability to put the solution into effect.

The technical progress of industries in the past has been due to the efforts of scattered inventors and workmen, all laboring under great disadvantages. Manufacturers and tradesmen are beginning to see that there are numerous possibilities of applying different scientific discoveries that have taken place as outlined in Chapter X. Competition compels us to realize that all industries and trades have developed to a point where the working out of theory and practice has become a science, and that the application supersedes the old "rule-of-thumb" method and demands the continuous employment of scientifically trained leaders in a bureau of research. The results of this bureau will tend to lower the cost of production by eliminating factory weaknesses, improving tools, and applying the principles of science to raw materials, waste products, methods, etc. It is for this reason that the Bureau of Standards and large corporations, such as the Du Pont Chemical Company, have research staffs with a group of specialists working on new industrial problems. The group may include chemists, biologists, designers, metallurgists, mechanics, etc., who have been trained in the scientific departments of the colleges.

A foreman usually comes from the ranks of workers. He is the job master, and as such must be able to form good judgments of human values, and to handle men. In addition, his outlook on life will be very different from that of the worker.

The skilled worker should have — in addition to good health — a clear mind capable of keen perception, and an inventive faculty — a quality which is often called ingenuity. His keen sense-perception should be such as enable him to do very accurate work, dealing with measurements of a thousandth part of an inch. The skilled worker differs from the unskilled worker in degree of mental versatility. He has acquired by experience a fund of information and skill so that he is able to form new judgments. The tasks of the skilled worker are such that only recent trade experiences are valuable for ready recall. This is the principal reason why a skilled workman can not leave his trade for any length of time without suffering a loss of skill.

Semi-skilled workers or machine tenders, spinners, weavers, etc., should have a good physical development and quick time-perception, which is really the quality of dexterity. Often such workers are physically sluggish, in addition to the general characteristic of slow mentality, which may be due to the lack of nutritious food or to dissipation, or both. Any reflective action on the part of the semi-skilled worker retards his rate of production. These workers are generally recruited from the ranks of those who leave school early, follow a line of employment with no prospects until they reach manhood, and then see a chance of getting an adult wage without going through the training necessary for the skilled positions. This worker is seldom called upon to meet a new situation, and his work never involves problems which can not be solved from the limited range of his past experiences. Automatic and semi-automatic machinery develops a fatigue, which is a serious problem. Women are able to work in this way better than men, and do not show fatigue to as great an extent.

The unskilled workers usually represent the least intelligent part of the community. Of course there are exceptions, as in the case of bright young people who have become "blind-alley" workers, or others who lack the sense of responsibility. In spite of the great increase in inventions, there are a great many processes performed by unskilled labor.

The occupations found in the textile and clothing trades and industries may be roughly divided into the following groups:

Occupations requiring skill and trade knowledge.

Occupations requiring skill and no trade knowledge.

Occupations requiring trade knowledge and no skill.

Occupations requiring neither skill nor trade knowledge, except in a very low degree.

There is a certain amount of industrial training that must be imparted to the men engaged in the exchange or marketing phase of industry. The knowledge of the salesman of his produce should be thorough, and at the same time should be different from that of the mechanic.

In addition to the above we find designers of fabrics, costume designers, and illustrators and colorists.

The following types of workers are found in a textile mill :

(a) Skein inspectors, including reinspectors, tensile testers, sorters, and graders. They inspect, sort, and grade skeins of yarn before they are wrapped and packed for shipment.

(b) Cone, quill, cop, and bobbin inspectors examine for broken threads and neat knotting and classify for packing.

(c) Wrappers and packers wrap, bundle, and pack skeins, cones, quills, cops, and bobbins for shipping.

(d) Truckers and handlers wait on or serve employees in other occupations by taking to and from them bobbins, spools, skeins, cones, etc. In some plants they are classed as service men.

(e) Laborers do the various kinds of unskilled work, such as moving materials and general cleaning.

(f) Other employees. This group includes wage earners in approximately 100 occupations in the industry other than those specified above. Each of the occupations in the group has too few workers to warrant tabulation as an occupation.

The classification of workers in a shoe factory is even more complex :

Cutting department :

Cutters, vamp and whole shoe, hand.

Cutters, vamp and whole shoe, machine.

Cutters, trimmings, hand (including dinkers and blockers).

Cutters, trimmings, machine.

Skivers, upper.

Cutters, linings, hand.

Cutters, linings, machine.

## Sole-leather department :

Cutters, outsole.

Cutters, insole.

Rounders, outsole or insole.

Channelers, outsole or insole.

Cutters, top and heel lifts, machine.

Heel builders, hand.

Heel builders, machine (including compressors).

## Fitting or stitching department :

Stampers, linings or uppers (including markers).

Cementers and doublers, hand and machine (including reinforcers, pasters, and fitters).

Folders, hand and machine.

Perforators.

Tip stitchers.

Closers or seamers.

Seam rubbers, hand and machine.

Lining makers (including lining closers and side and top facing stitchers).

Closers-on.

Top-stitchers (including under-trimmers and barber trimmers).

Binders (including top banders).

Buttonhole makers.

Button fasteners.

Eyeleters (including hookers).

Vampers.

Barrers (including tackers).

Tongue stitchers.

Fancy stitchers.

Backstay stitchers (including back strappers).

Table workers.

Lacers (before lasting).

## Lasting department :

Last pickers or sorters (including last casers).

Assemblers, for pulling-over machine.

Pullers-over, hand.

Pullers-over, machine.

Side lasters, hand.

Side lasters, machine.

Bed-machine operators.

Hand-method lasting machine operators.

Turn lasters, hand (including first and second lasters).

Turn lasters, machine.

Turn sewers.

Tack pullers, hand and machine.

Bottoming department:

Goodyear welters (including in-seamers).

Welt beaters and slashers.



SHOE FACTORY IN SANTIAGO, CHILE  
In which American machinery is used

Bottom fillers, hand and machine.

Sole cementers, hand and machine (including bottom cementers).

Sole layers, hand and machine.

Rough rounders.

Channel openers and channel closers (including channel layers, channel turners, channel cementers, and lip turners).

Goodyear stitchers.

McKay sewers.

Stitch separators (including stitch wheelers).

Levelers.

Heelers, leather.

Heelers, wood.

Heel trimmers or shavers.

Heel breasters.

Edge trimmers.

Sluggers.

Finishing department :

Buffers (including bottom scourers).

Naumkeag operators.

Edge setters.

Heel scourers (including first and second scourers).

Heel burnishers (including stoners, expediters, and heel slickers).

Bottom finishers (including bottom slickers).

Brushers.

Shoe cleaners.

Last pullers, hand and machine.

Treers, hand and machine.

Repairers (not cobblers) (including tip fixers and scourers).

Dressers.

Sock liners (including heel-lining, heel-pad, and heel-pin pasters).

Lacers (before packing).

Packers.

Work that requires the least skill is usually found in connection with longer hours. Mill employees labor longer than machinists or electricians, hence mill or textile work is not as popular as electrical work. Certain kinds of labor are more irksome and tiresome than others, chiefly because of the longer hours. Human nature longs for rest and recreation. Experience has shown that labor tends to become disagreeable, painful, and monotonous with repetition. For this reason we find a tendency in larger plants to limit the hours of labor for such work to eight hours.

Up to the age of twelve, children do not show marked differences in characteristics. After this age, children begin to differ, particularly in their physical and mental capabilities. Some children grow faster than others. Some children lose interest in books and dislike the methods of formal teaching as carried out in school. It is from this class that industry and commerce have recruited their workers. While most of these children lack the power to commit to memory the information on the printed page, they

often possess large imitative powers, particularly along the line of manipulative skill.

This skill differs with various people. Some have the power to work with materials to a thousandth part of an inch. Others have the power to work only to one-eighth of an inch. Some can develop their senses to a remarkable degree. Many young women and men have the power to coördinate their fingers, hands, and eyes and do rapidly very fine needlework and other detail work on wearing apparel. In addition, this class has a strong coöperative spirit, is not too ambitious, and has large physical powers that can be utilized in the complicated system of industry and commerce of wearing apparel, and it does a great part of the world's work.

From this group are recruited the craftsmen who design wearing apparel, the workers who control the machines and the raw material, and the traders who buy and sell and create the demand for the finished product.

**Capital and Labor.** The organization of modern industry has become so complex since the introduction of power machinery and large-scale production, that there has appeared a distinct conflict between two groups in industry — those who own, supervise, and direct capital in production, and those who work for wages. The first group represents management and capital in the factors of production, and the second group represents labor. The problem of apportionment of the social income is largely a question of the share labor shall receive for its contribution to production.

We have already, in Chapter I, considered the various factors of production and the form in which each receives its share of the social income. Thus we find the return for land being made in the form of rent; the return for capital in the form of interest. The amount of rent varies according to the fertility of the soil, the location, etc. The amount of interest on money invested varies somewhat according to the degree of risk, the amount of capital supply in relation to demand, etc.

Owners of land and capital and the entrepreneurs of business all belong to the capitalist group, as it is generally spoken of, in contrast to the large body of workers, who represent the element

of labor. The struggle of the workers to obtain a larger share in the social income is the real basis of the labor problem in America as in other countries. For this reason it will be wise to discuss at some length the contribution of labor to production and the reward to labor in the form of wages. The fifth factor in production — the government — and its share in the social income will be considered later.

**Labor as a Factor in Production.** Labor is a term used in general to refer to the physical efforts of man, but in an economic sense it includes all human efforts, both physical and mental, used in the creation of utilities in goods. The physical efforts depend upon health and strength, and the mental upon general education, technical education and skill, moral qualities, honesty, industry, and reliability. Labor, in the general sense, refers to the exertion of body or mind with a definite purpose, wholly or mainly with a view of maintaining or bettering the condition of life. Work is what is accomplished or is done by labor. The purpose of work is to procure or improve on the necessities, comforts, or luxuries of life.

Labor in the past has been contributed by slaves, serfs, servants, or wage earners. Slave and serf labor are degrading, and therefore do not exist in this or any civilized country. Servants may be given lodging and board with a fee or stipend. Most of the workers today employed in industry receive a payment under contract for industrial work done for another. The laborer is a human being whose wages are necessary for the conservation of existence and efficiency, and whose work is primarily directed to this purpose. Labor, therefore, is different from a market commodity even though it is in many respects treated as one in industry. The wages paid to labor are generally considered to be the price paid for it, and this price is to a large extent controlled by supply and demand and other factors that govern the price of commodities. But such a theory of labor is not adequate in our present social order.

**Dignity of Industry and the Worker.** A glance through educational history will show us that the reason hand labor has not received a dignified place in society and education is due to the tradition from the Greek philosophers, who looked with contempt

on manual work, which was performed by slaves — the workers and tradesmen of the age — and purposely omitted from the schools the training in utilitarian subjects.

During the Middle Ages the same feeling existed; hand work and industrial education were apart from culture; the former were matters of apprenticeship and the latter a matter of books. This state of affairs continued in England up to the nineteenth century, when the primary school provided the education for the industrial workers. Pupils were educated in the higher schools to be employers. People were expected to remain in their station of life. Culture was the possession of the upper classes and had absolutely nothing to do with utility. During the last century the sentiment that the masses were expected to support the classes in their leisure has passed away, particularly in America. The spirit of democracy has dominated our social system, so that today every man is expected to be a worker of some kind.

No industry today has suffered more from misunderstandings and disagreements between the workers and the manufacturers than the textile and clothing industries. The worker offers his services for sale to the manufacturer. The industry requires both the worker and the manufacturer. Therefore it is absolutely necessary for the workers and manufacturers to come to an agreement through the spirit of coöperation.

**The Rights of Labor and Capital.** The rights and duties of manufacturers (capital) and labor may be considered from the two points of view: the natural rights and the legal or social rights. The natural right of man is the universal need of mankind, while the legal or social right is the need of man that society is pledged by custom to guarantee. These rights are constantly changing because of political conditions. The legal or social right has worked to the disadvantage of labor, so that it receives a minimum living wage but not much more. By raising the standards of living, the lower or laboring classes will secure (*a*) better religious and character training, (*b*) more recreation, (*c*) better education, (*d*) better housing and feeding, etc.

While labor, from a strictly economic point of view, is a commodity, nevertheless experience shows that it is a special com-

modity that requires special protection and legislation. Otherwise many employers in their zeal for profits and lack of vision will attempt to exploit labor without realizing the harmful future effects on both industry and community. Many progressive manufacturers have sufficient vision to see that labor should be treated with consideration, and that wages, hours of service, etc., should be considered from the best interest of society, which is also the best interest of the manufacturer and laborer.

Hence, society has been obliged to protect the rights of labor and enact such legislation as will be favorable to it. Among the most important laws passed by different States and countries are the following: (a) Regulations for safety of employees, (b) sanitary laws for factories so the workers may have fresh air, plenty of light, and proper sanitary conveniences, (c) laws limiting the hours of labor to eight, or less in times of decreased productivity, to insure sufficient work for all, (d) laws requiring at least one day's rest in seven, so that each worker will have sufficient time to relax and enjoy the companionship of his family and friends, (e) workmen's compensation for accidents, so that a worker may receive a percentage of his pay while he is injured, (f) elimination of child labor so that every child may attain his physical growth and schooling during adolescence, (g) many States have passed a law protecting women and children from low wages, requiring manufacturers not to pay less than a definite amount, (h) unemployment insurance and old-age pensions have been adopted by clothing unions and certain governments.

**Conditions of Labor.** Labor does its best work or has its highest efficiency when there is (a) division of the work, (b) effort directed correctly, (c) a spirit of coöperation among all groups, (d) a proper attitude of employees and the government toward labor.

The government in the interest of society protects the manufacturers and the workers. Both are necessary to society, but neither must attempt to do things that will interfere with the success of society as a whole. Industrial operations that are harmful to workers must be closely supervised so that devices may be used that will reduce or eliminate the harmful effects.

The textile and clothing industries have, during their development of factory organization, been guilty of many abuses and

injustices to workers and to society. Among these abuses may be mentioned the following :

(1) Long hours of labor. Originally the hours of work were excessive, in some cases extending from 5 : 30 or 6 A.M. to 6 : 30 P.M., at least twelve hours and in some cases more. These hours were due to the desire on the part of the manufacturers to carry on production as cheaply as possible with only two shifts of employment a day.

(2) Employment of women and children for night work.

(3) Employment of workers at wages too low to permit a minimum standard of living suitable to their class in society.

(4) Use of sweat-shop methods, by which piecework was done in unsanitary homes by women, men, and children.

(5) Use of fines and penalties as punishments in the attempt to secure superior workmanship.

(6) Seasonal unemployment because of irregular production.

**Unemployment.** One of the greatest fears of the worker is unemployment, and thus loss of his means of existence.

Unemployment is due to many reasons: (a) Seasonal employment due to the change in styles, (b) introduction of automatic and higher production units of machinery for textiles and clothing, (c) business cycles — periods of prosperity and depressions which occur at definite periods of time.

The recent invention of textile and clothing machinery has decreased the number of persons employed in that field. What is true of the textile industry is true of other industries as well, and the excess of workers in the United States today has reached enormous figures.

Since unemployment is one of our greatest evils, drastic measures should be adopted to give work to as many people as possible. The five-day week is by no means the only work spreader. While millions of men are unemployed, the great bulk of workers in this country who still have jobs are putting in long days, many of them at the expense of their health. Shorter working days as well as shorter working weeks would contribute greatly to make the limited amount of work go around.

Another way in which work can be spread is by reducing child labor. There has been no increase in unemployment among

children. On the contrary, there has been a considerable increase in child labor during recent years. Fully a million children who should be at school have until recently been gainfully employed. This is not only an economic anomaly; it is a national disgrace. In 1934 renewed effort was made to secure the ratification of a child labor amendment to the Constitution.

One defect in the program for spreading work is that it does not increase consuming power. The same amount of money will be paid in wages to a larger number. It is far better for government and employers to spread work than to throw men on the street, where they must be taken care of through contributions, public and private.

But to insure steady consuming power unemployment insurance is necessary. We have been frightened by talk of the dole in connection with unemployment insurance. Actually there is no good reason why workers should not be insured against the loss of their jobs. We insure ourselves against everything else. Yet there is nothing, save illness and death, more important to a worker than his position.

In 1931 the American Federation of Labor issued figures showing that there is in the United States, today, work enough to employ for thirty-five hours a week all those who are idle. The contention is, that if a seven-hour day and a five-day week were adopted in every industry, unemployment would literally vanish. The inference is that there is plenty of work in the United States for everybody if only it were divided up equitably. With the number of idle workers and the difficulty of finding jobs, it is hard to believe any such assertion during the depression.

In most industries, the normal working week is forty-eight hours, scaling down to forty-four in many cases. Between that schedule and the thirty-five hour week there is no great gulf. Yet that small difference is enough to deprive of work something like a quarter of all our wage earners and to put long columns of red figures on the ledger of a vast number of industries.

Before the depression came, we had several years of high prosperity. During that time something might have been done to prepare for the coming of hard times which usually follow periods of prosperity. Working hours might have been readjusted so as

to divide the employment among a much greater number of workers. The high profits then made would have enabled industries to do this without any great reduction of the individual incomes.

Most progressive people define prosperity as the full employment of labor at high real wages. Political tampering with the economic cycle is likely to remain hopeless as long as it fails to place emphasis on the welfare of the working population.

In times of depression, when as many as 7,000,000 human beings are denied the right to work, business profits can not be satisfactory and financial risks can not be considered safe. Until the unemployed are redeemed from idleness insufficient buying power will continue to disorganize trade and industry.

For some years industrial leaders of a certain type, as well as their trade organizations, calculated that by reducing wages, increasing prices through legislation, and displacing labor with machinery, they could increase their profits. This must have been predicated on the insane notion that with workers reduced in purchasing power — thrown upon the street — the demand for their products would nevertheless be maintained.

The workers demand a five-day week ; and this is called drastic by many people. One petition for such a plan reads as follows :

Instead of forcing working people into idleness during periods of economic recession, labor demands that such adjustments in the number of days worked per week and in the number of hours worked per day must take place so that all may share equitably in the amount of work available. Work security must be substituted for anxiety and unemployment. The management of industry which has failed so miserably must rise to new heights and assume new positions.

Certainly if the displacement of man power by machinery is to be pushed at the present rate, something of the sort is inevitable, unless we are prepared to gamble on the possibilities of having a vast army of chronically unemployed.

Working people . . . no longer concede to industry the right to provide work at will or to force millions of people into unemployment. They hold that the right to work is a fundamental sacred right.

**Trade Associations and Labor Organizations.** The questions of a living wage, fair wage, better wage, difference in wages,

hours of labor, methods of protecting labor, strikes, lockouts, etc., are problems before us every day and affect, more or less, all of us.

Certain devices for settling these problems in a peaceful manner have been worked out through the formation of trade associations and labor organizations.

Labor organizations were formed in the United States over a century ago as labor unions representing workers of certain trades or divisions of a trade. Later these separate labor unions were invited into national organizations such as the American Federation of Labor, which includes trade unions from many industries. The leading organizations in the textile industry are the United Textile Workers of America and the United Garment Workers' Union. The textile industry and the clothing industry on the whole have been more or less opposed to organized labor. Many manufacturers have encouraged the employees to form organizations or associations independent of the national labor organizations. The textile and garment workers have not been organized as effectively as other industries.

The trade unions are chiefly concerned with relations between labor and employers in their own industry. In addition many unions assist the families of workers by providing relief in times of distress and by various forms of insurance. The American Federation of Labor strives (a) to improve the conditions of the working people by legislation, (b) to increase the sale of union-made goods, (c) to expand the idea of collective bargaining and peaceful picketing, (d) to assist in the formation of local unions.

Employers and manufacturers have also formed associations to look after their interests with regard to: (a) legislation, (b) tariff, (c) standard prices, (d) arbitration, (e) standards of ethics and trade practice, (f) relations with labor. Some have assumed a friendly attitude to labor organizations and others have not.

An establishment in which only union men may be employed is called a "closed shop." If both union and non-union men are employed, it is called an "open shop."

The attitudes of both trade organizations and trade unions naturally reveal many of the characteristics of the individuals that compose them. Sometimes selfishness and greed predominate to

prevent their functioning in ways that will best serve the interest of society and industry.

Trade organizations conducted wisely in the interest of both the producer and society at large, that is, the public, could be assured of all their potential advantages — such as uniform contract forms as an assurance of fair treatment to all, prevention of litigation by arbitration, elimination of seasonal work, etc., and at the same time safeguard against the disadvantages. The trade organizations would be assured of a considerable measure of confidence and support from the public or society in general for the solution of the problems between capital and labor.

Both employers and workers have certain weapons that are used to settle disputes; but some of these are anti-social in their effects.

**Collective Bargaining.** One of the causes of the frequent misunderstandings between the manufacturers and the workers is the difference in the bargaining power of each group. The worker is always at a disadvantage when he applies for work. He does not know how many workers are needed nor the compensation the manufacturer can afford. He does not know exactly what his services are worth, and he is compelled by necessity — living on wages from day to day — to accept what the manufacturer wishes to give.

Wages of workers were originally set by the manufacturers, who paid as little as possible. As time went on the workers organized into unions, and a representative of the union met the manufacturers and agreed on a wage. This method of adjustment is called *collective bargaining*. If they were unable to agree, a strike was called and the workmen refused to go to work. Sometimes the question of wages is left to arbitration by a committee composed of a representative from the union, one from the manufacturer, and a third party agreed upon by the two groups. Differences frequently arise between the manufacturers and employees — particularly the manufacturers of costumes — which cause a “shut-down.”

**Strikes and Boycotts.** Each national labor body has methods of compelling the industry and public to consider its grievances. The American Federation of Labor believes in strikes and boycotts as means of forcing employers to grant concessions to workers.

A strike is a powerful weapon in the hands of labor, particularly at the beginning of a rush period of factory work. On the other hand, a lockout, the refusal on the part of the manufacturer to consider the demands of labor and to threaten to close down his plant until labor is willing to accept his terms, is very effective in times of depression.

A boycott is a definite organized effort on the part of labor to reduce the sales of an employer who will not agree to their demands. If the commodity is widely used and the workers will organize, the boycott will be successful. A "black list" is a device used by manufacturers to keep disturbing factory employees from securing a position. While the black list device is illegal, nevertheless it is effectively used and it is difficult to prevent it.

In connection with strikes, the workers frequently engage in picketing. That is, a group of workers stand in front of the manufacturer's place of business and notify workers and the public that the owner is "unfair" to organized labor. This is called peaceful picketing.

By means of court injunctions it is possible for manufacturers to restrict the activities of the strikers. While peaceful picketing is legal, there are phases of picketing that are illegal, as shown in the following discussion.

The distinction between legal and illegal strike picketing is clearly defined in a decision handed down upholding an injunction granted to pocketbook makers against the International Pocketbook Workers' Union and 23 individuals. The dispute between the concern and its union employees had its inception in February, 1931, when the workers, attempting to unionize the shop, called a strike. The manufacturer applied to the Superior Court for an injunction, alleging that strike pickets were intimidating their employees who remained at their jobs and were using unfair methods to persuade the workers to quit. The union and 23 individuals were restrained in bonds of \$5000 from threatening, intimidating, coercing, or annoying persons desirous of entering or remaining in the employ of the company.

The firm manufactured pocketbooks and claimed to have an investment of \$76,500 in its local factory and New York salesroom.

The firm asserted that its business would be ruined if the pickets were allowed to continue their activities.

The union workers claimed in their appeal to the Supreme Court that intimidation or coercion can not be found to exist in the absence of actual physical violence or express threats of physical injury to persons or property.

In respect to this allegation the Supreme Court said :

Such assumption is not well founded. To intimidate is to inspire with fear, to overawe, or make afraid. Fear may be inspired without physical violence or spoken threats, moral intimidation may be accomplished by a menacing attitude and a display of force which may coerce the will as effectually as actual physical violence.

The acts and conduct of the defendants were intimidating and coercive. Employees of the plaintiff were followed to and from their work. When entering and leaving the factory they were compelled to pass groups of strikers who gave them black and threatening looks. These groups at times contained as many as 20 strikers while the whole number of employees restrained by the plaintiff did not exceed 35.

This was a display of force which, with the inscriptions on the placards carried by the pickets indicating that the whole power of the American Federation of Labor was back of this strike, was well calculated to overawe and intimidate. It could have had no other purpose and actually had such effect, some of the employees requiring police escort to and from their homes.

**Cost of Strikes.** The following figures show the amount of loss as a result of a clothing strike in New York in the spring of 1932. Since consumers must eventually bear this cost, the loss to society was very great. The strike resulted in approximately \$50,000,000 loss to the workers in wages and to the manufacturers in returns on products sold. The garment trade, a highly seasonal one, does an annual business of \$300,000,000 over a ten- to fourteen-week working period. The tieup, even for the limited period, affected Easter deliveries on the West coast and in mountain regions.

**Radical Labor Organizations.** In addition to the regular trade unions connected with the American Federation of Labor, certain other labor groups of more radical character have grown up in the textile and garment trades. These organizations are usually connected with the I. W. W. (International Workers of the World)

and other communistic bodies. These elements believe generally that the workers should control industry — *i.e.*, that each industry should be owned and managed by the workers in it. Followers of these theories have often worked among strikers in large mill centers and garment centers. They favor force, such as injury to machinery and destruction of product, in the attempt to accomplish their aim, as well as the ordinary weapons of strikes and boycotts.

Many of these communistic groups of labor pattern their beliefs on the plan of industry set up in Russia, where all means of production and all the products of the social income are pooled in a common body, in which each worker is entitled to a share.

The Needle Trade Workers Industrial Union (communist) is in opposition in their actions to the International Ladies' Garment Workers Union, affiliated with the American Federation of Labor.

The communist groups have no collective dealings with organized employers of the industry. The officials of the American Federation of Labor state that their actions are to divide and demoralize the workers, by opposing the labor unions.

**Peaceful Methods.** The following methods have been used in settling industrial disputes between manufacturers and labor: (1) Trade agreements, signed by the owner and the employee, stating the wages, hours of labor, and working conditions for a definite time — year or more. (2) Conciliation, consisting of conferences between committees composed of members of the union and representatives of the employers; these conferences attempt to settle differences involving conditions of employment. (3) Mediation: if the union and employer fail to come together as outlined under (2), a third party, usually a public officer or representatives of the Chamber of Commerce, attempts to bring the two parties together as under (2). (4) Compulsory investigation or arbitration, under which grievances must be submitted to a government Board of Investigation before engaging in a strike or lockout. (5) Voluntary arbitration; when other measures, outlined under (3) and (4), fail, the interested parties may submit the questions at stake to a third party. (6) Compulsory arbitration: in some communities all questions between labor and manufacturers must be submitted to an impartial board of arbitration. (7) Shop

committee or workers' council : a committee or council is appointed or elected by the workers to discuss with the officials and employers all questions of shop management, wages, hours of service, etc. Under (7) the union is not considered, but only those workers immediately concerned. Of course, the union claims that the workers, being inexperienced in dealing with manufacturers, are at a disadvantage in such cases.

**Welfare Work for Employees.** One of the most serious problems today that confronts the industrial world is the discontent and unrest of the workers in the trades and industries. This is due in a measure to the overgrowth of the present industrial condition of highly specialized work that has made the worker in some cases a mere attachment of a machine. Modern engineering has developed the machine part of industry at the expense of the human factor. To illustrate : Modern shop systems in general have been organized so as to allow to each machine a definite earning capacity that is expressed in the form of a daily or hourly machine rate. Machines represent the investment of large sums of money, and therefore must be kept at work all of the time in order to justify the expenditure involved in their purchase. If a machine, for any reason, is allowed to stand idle, the charge against it mounts up, and it becomes a burden instead of being a useful and productive investment. In the attempt to develop the efficiency of the machines, many manufacturers and tradesmen have lost sight of the fact that the worker is human and demands consideration.

The progressive manufacturers have seen this spirit of unrest growing among the employees and have attempted to assist them in various ways which are usually grouped under a heading called "welfare work." A specially trained person called an employment manager is usually selected to employ workers and look after their welfare. This welfare work has failed in some cases because it conferred benefits upon a group of workmen, requiring and asking no service on their part.

**Coöperative Industry.** At the time of the establishment of the factory system, the employee worked all the time for the employer and received compensation in the form of wages. Today there is a strong feeling that the improvement of the employee's condition must go on. While the wage system has certain advantages and

certain disadvantages, it may be that a system of coöperative relation between the employer and employee will in the future take the place of this in industry. Under this system the worker will share in the profits and assist in the management of the plant through committee representatives.

Under such an arrangement, a certain percentage of the profit is turned over to meritorious workers. Half of this amount is given in cash and the other half in stock, so that the recipients become partners in the business. The workers are rated with merits and demerits as their performance warrants, much in the same way that the merit card system is applied in school. If at the end of the year one employee receives more than another, he knows why. All in all, the scheme puts the employees on their mettle. They take more interest in the business because they know it will benefit them as well as their employers.

The partnership plan is based on the following theory: The corporation is made up of three groups: (1) The manufacturing group in the factory, (2) the selling and administrative group, such as salesmen, officers, accountants, clerks, etc., and (3) the investing group, which furnishes the property and the capital to operate. These three groups, in effect, constitute a partnership. In a partnership each partner shares responsibility, each is entitled to know what the other partners are doing, and all partners are entitled to share in the profits in proportion to their interest.

Proceeding on this theory, the directors of one company made this proposition to the workers: Elect your own board of operatives — a member from each branch of the industry — to represent the interest of the workers. It will carry your grievances to the management; it will manage the houses owned by the company and in which you live; it will initiate and manage any educational and recreational work among the employees or in the community.

Such coöperative methods will eliminate many causes for industrial conflict.

**Socialism.** Followers of the theory of socialism contend that the employer appropriates a good part of the increased value of manufactured goods, which is due to the labor of the workman on raw material; and out of this part appropriated he receives too large a share of the social income.

Socialism advocates the government ownership of all property that is or may be used in producing wealth. This really means the management and control of all business by the government. While many people believe that there is some justification for the government to control streets, streams, harbors, schools, commerce, post offices, water power, monopolies of the necessities of life, — such as coal, oil, express, freight, trolley, railroad, ice, timber-land, etc. — it is generally believed that any wholesale attempt for the state to take up ownership of complicated industry would fail financially and private enterprises would be destroyed. Even the attempt on the part of the government to assume control of public utilities should be done slowly so that the community may be able to assume responsibility by developing a strong coöperative spirit.

The objections to these socialistic programs for the betterment of society and industry are many. The following are the principal ones :

(1) The chief objection to socialism is that it is too theoretical and fails to consider human nature in all its aspects. While there is the instinct of coöperation in mankind, there are also other instincts like selfishness or self-interest. We can not consider any one instinct alone and ignore the others. The weakness of socialism is that it assumes that mankind is coöperative to the *n*th degree and that self-interest may be stifled — which is not to be. Self-interest or selfishness is a vital force in all of us and particularly in industry it is the vital force that moves us ahead. Hence any attempt to destroy self-interest completely will also destroy the progressive development of industry. Socialism fails to consider the characteristics of human nature as outlined in Chapters II and III. Man is inclined to be intensely selfish and not willing and ready to work to his greatest capacity for the pleasure of helping or assisting his fellow man. The history of the human race shows time and time again that people do not invent and work hand in hand unless they see and can receive rich prizes or rewards for their efforts in the form of leadership, good name, money.

(2) In order that work be done efficiently, it is necessary to have leaders or managers who can plan, supervise, and direct the work. Human nature is such that it would prefer to give rather than to

take orders. Hence under socialism too many would attempt to become leaders, and the result would be inefficiency.

(3) No one would care of his own accord to do the menial work of industry. Hence the distribution of human talent would cause much discontent and jealousy.

(4) It would destroy individual freedom, as everything would be done by the government or by committees of workers.

During periods of the depression in the world many people believed that agencies such as the government could coördinate industry to advantage.

**Government and Taxes.** A large amount of the world's wealth is consumed in the support of the national, state, and local governments. The various methods of raising and distributing the necessary funds compose what is known as public finance. The money collected by the government for its support is called *taxes*.

Taxation may be justified for the following reason: Government, whether national, state, or local, is one factor in the process of production, because government bodies maintain the rights of business men to do business; they protect contracts, trade-marks, patents, etc.; they regulate health, safety, sanitary conditions; regulate hours and wages in some industries; restrain destructive trade practices and unfair competition; maintain tariff protection; and facilitate production through trade information, consular service, etc. For these services the government is entitled to a return in the form of taxes. Furthermore, that portion of the social income returned to the government is to be used for the public welfare, and hence is dispensed for the benefit of all classes.

It is important that the local, state, and national government of a country, particularly the local, should be favorably disposed toward industrial progress. Manufacturers and business men are willing to invest their wealth in a plant that is located in a community favorably disposed toward the industry.

**Public Finance.** Since the government has assisted the development of all kinds of production in addition to looking after the welfare of the members of society, it is only natural that it should receive a portion of the created wealth so that it may continue to perform those duties that are necessary for the government to undertake.

Public finance through taxes provides by the government: (1) protection and safeguarding the health, (2) education of physical and mental abilities of the individual, (3) facilities for stimulating and protecting industry and general prosperity. No one industry has received more assistance than the clothing and textile trades, as shown by the following: (a) police and fire protection, (b) health protection and disease protection, (c) factory regulations and protection to the worker, (d) public improvements — streets, parks, etc., (e) education — both general and vocational, free of cost.

Our government has always given encouragement and protection to the clothing industry through enactments of laws and tariff regulations. The colonies enacted laws for the encouragement of wool-growing and manufacture. Efforts were also made at an early date to encourage weavers and artisans to come from foreign countries and establish the beginning of the factory system by building and operating woolen-goods mills, thus supplementing the results of domestic manufacture. They so increased in the following century that the carding, weaving, and spinning of wool and the dressing of cloth became general in all the colonies before the War of the Revolution.

As the friction between the mother country and the colonies became intense, a patriotic impulse for the wearing of homespun, and the discarding of English-made goods, became general. It is said that the Harvard graduating class of 1770 appeared in black broadcloth of New England manufacture. Similar patriotic impulses actuated professional and business men, and women vied with one another in their patriotic devotion to homespun textures.

In 1785 a medal was offered by a South Carolina society for the first flock of merino sheep kept in the State, but it was eight years before the first sheep of that breed was imported into any other State. President Washington was an importer of improved English sheep, and many prominent Virginians took an active interest in the development of the sheep industry.

In the other colonies the public men were ever the friends of wool-growing. It was a subject of vital interest to all, as clothing, next to food, is the greatest physical want of humanity. Cotton was scarce and high, and wool for the winter, as flax for the summer, was an admitted necessity of existence. Public men, almost

without exception, were favorable to the encouragement by legislation, by premium and bounty, of the manufacture of wool.

This early protection and encouragement of the textile and clothing industries in America has been continued as the industries became more complex. Perhaps one of the most important services that have been rendered by the government bodies is the support of vocational and industrial training for textile workers.



### **Industrial Education.**

COSTUME ILLUSTRATION ROOM IN A TRADE SCHOOL

The progressive development of all textile trades and industries demands the training of a group of skilled workers who may act later as foremen. The future skilled workers must be trained. Industrial conditions today differ very greatly from those of earlier times; trade and industry are more ambitious, more successful, and more scientific, than ever before. Years ago they were too simple for intellectual study. Now they require the highest forms of study and demand the best intellects.

Industrial education in the textile trades may be advocated because of the increased earning power it affords. The salary of a person is determined by certain factors which may be divided into two groups, — those pertaining to the individual and those pertaining to the organization. The individual group includes such factors as natural ability, proper development of the body, cultivation of honesty and morality, which are by-products of general education and industrial education. The factors that enter into the organization group are capital, up-to-date appliances, leadership, proper allowance for depreciation, etc. One of the chief factors that will increase the productivity of the individual is

industrial education. Increased productivity will enable the country as a whole to increase the standards of living, and the worker will be able to have some of the luxuries of life as well as the necessities.

To summarize: It is to the interest of society, labor, and capital to have the most effective system of industrial education. Properly trained workers (labor) increase the production. From the workers' point of view, physical energy and knowledge represent the workers' capital, and the greatest return to the worker, in addition to personal satisfaction, comes only through an efficient system of industrial education. Society profits when every member has rendered his greatest contribution.

**Taxation.** The government of a country and its subdivisions — state and local communities — is supported by various forms of taxes. The expenses are carefully prepared in a statement called a budget, and the money necessary to equal the budget must be raised in various ways by taxation. There are at least three forms of taxes: (a) Federal, (b) State, and (c) local community tax.

The government has two ways of securing money — taxation and bond issues. But government has only one source of revenue and that is taxation. When a government borrows money to meet its obligations, it simply defers the payment of those obligations. In reality, governmental borrowing means governmental expenditure upon the installment plan; it actually constitutes a mortgage on the taxes of the future.

Taxes are imposed upon the following theories: that each individual should pay in proportion to the benefits he receives, and that taxes should be proportionately divided according to the ability to pay. In addition, taxes should be conveniently imposed, easy to collect, definitely placed, and should not be high enough to discourage any industrial undertaking or enterprise.

All taxes are either of a direct or an indirect type. Direct taxes are those imposed and borne by the persons who pay them, such as poll taxes, inheritance taxes, etc. Indirect taxes are those that are shifted from the person on whom they are first imposed to the final consumer. To illustrate: Taxes on manufactured goods, costumes, etc., are added to the final price paid by the consumer.

It may be good politics to talk about shifting the tax burden from the individual to industry and business, but such discussion actually means little. In the final analysis, the tax burden of this country falls upon the consumer. It forms a part of the cost of living of every citizen — the farmer, the home owner, and the wage earner.

The taxes upon real property are the easiest to enforce and the least flexible of all taxes. The tendency under pressure of need to continue these unchanged in times of depression, despite the decrease in the owner's income, places an undue burden upon that portion of the community in which real estate is the chief property item. The tax burden upon real estate is wholly out of proportion to that upon other forms of property.

**Sales Tax.** A sales tax — that is, a small tax of two per cent or three per cent on producers' sales of all kinds of commodities — has been advocated for many years. The principal source of revenue for communities has been the tax on land and buildings, and since it has been inadequate a sales tax has been suggested. Objections have been made to sales tax by both producers and consumers. The producer feels that the sales tax will decrease the possible sales and require much additional labor in keeping records.

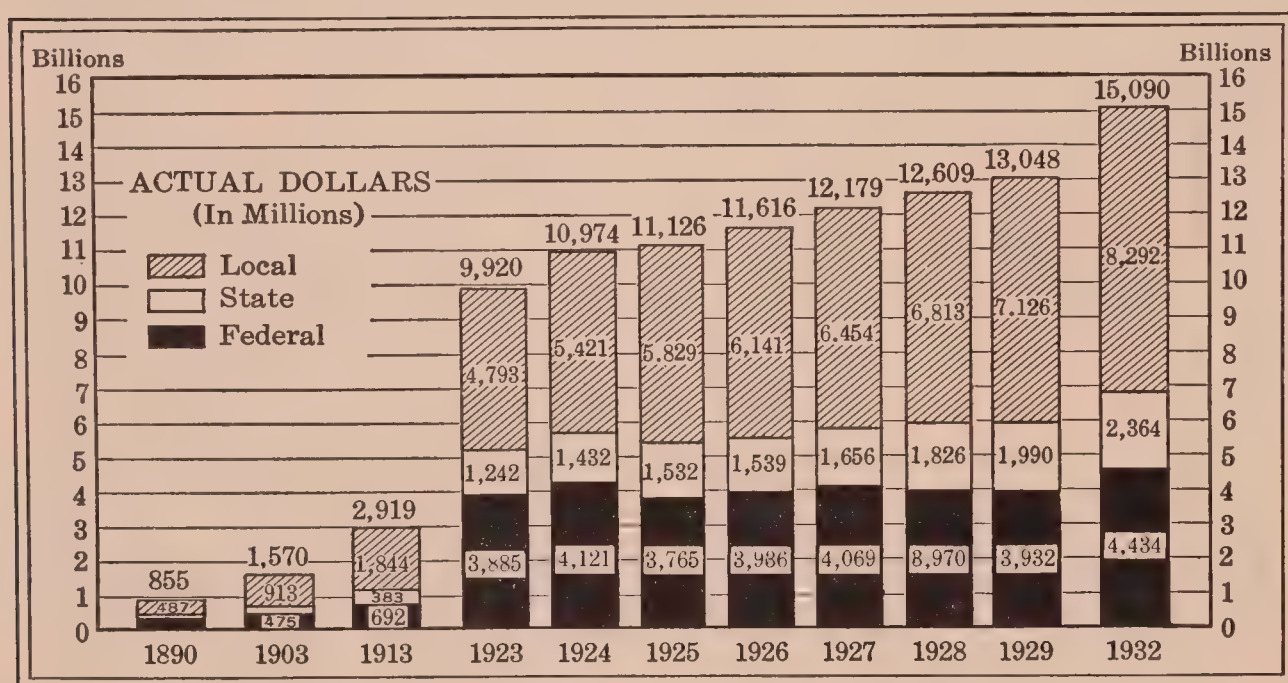
**Reduction of Taxes.** There is a tendency on the part of social welfare committees and organizations to urge the government to assume a paternal interest in many problems. They do this on the assumption that all individuals exist for the state, and that the government should exercise a paternal interest in the home, the farm, the factory, the child, the worker, etc.

During prosperous times the government has organized bureaus and departments for supervision of this work. People become accustomed to the paternal interest and "gifts" of the government. Then in times of depression human nature finds it difficult or doubly hard to save after the long period of extravagance. In like measure, governments compelled to cut down expenses are inclined to cling to their accustomed luxuries. Economy in general is popular, but economy in detail is distasteful.

As a people, we admit that government budgets must be balanced and public credit maintained. But as individuals we now disclaim all personal responsibility for governmental extravagance, and we

are looking for an opportunity to shift our share of the burden. This is characteristic of human nature — let the other man do it.

The share of income devoted to tax charges has been steadily increasing. Before the War, theoretically, every man worked 25 days a year for the national, state, and local governments combined. In 1924 he worked 46 days a year. Today he works for the support of all forms of government 61 days out of a year. Another way of expressing the amount devoted for taxes out of the amount earned is to say that one dollar out of every five earned today is going to 250,000 tax-gathering and tax-spending agencies.



GOVERNMENT EXPENSES IN THE UNITED STATES

Often because of policies introduced during prosperous times we find that expenditures by government in times of depression constitute such a large proportion of the national income that citizens are deprived of the purchasing power necessary to a revival of business activity. When the government reduces taxes, its citizens will have more money for the purchase of goods and services. Agriculture and industry will have more money for the employment of labor and for the purchase of materials and supplies.

We frequently encounter the familiar and fallacious argument that a government can be run along the lines of a private business, and that its operations should be adjusted to changes in economic conditions by adopting the methods of private employers. As a

matter of fact, the gap between private and public business is large. The former, run for profit, is forced to adjust its scale of operations to the state of public demand, and when times are bad, its outlays for wages, supplies, etc., decline accordingly. Governments, on the contrary, usually find that the demands made upon them are greatest when economic activity is at a low ebb, so that efforts to economize may be least successful when the need of sparing the taxpayer is greatest. Nevertheless a definite effort should be made to curtail government expenses in times of depression, as there is little merit in the idea that extravagant governmental expenditures and high taxes will produce sound and healthy business conditions.

### QUESTIONS

1. What is meant by the expression "social income"? Explain in detail in terms of the textile and clothing trades.
2. (a) How is the social income distributed? (b) Why is the problem of the distribution important and difficult?
3. State the reasons for each factor of production receiving its shares.
4. What is meant by the expressions: (a) national wealth? (b) per capita wealth, (c) national income, (d) per capita income?
5. Describe the items included in the national wealth.
6. Why must the income to various factors change in response to industrial conditions?
7. Roughly speaking, state the percentages due (a) labor, (b) overhead, (c) raw materials in the clothing trades.
8. (a) Describe the meaning of Ricardo's Iron Law of Wages. (b) Does it work exactly in all cases in all countries?
9. Why should wages and salaries differ for different classes of workers?
10. Describe briefly different classes of workers, and state their contributions to the production of textiles and clothing.
11. Explain how the supervisory officers differ from workers in the contribution to the production of textiles.
12. Describe the different types of workers and their qualifications.
13. Give approximately the number of different types of workers employed in (a) textiles and (b) shoe factories.
14. Describe the types of textile work that are most attractive. Explain.
15. Why are juvenile workers employed in textile mills?

16. We hear much of the expression "capital and labor." Explain in detail and state why there are constant disagreements between them.

17. Explain how capital and labor assist in textile production.

18. Why is office (secretary) work usually considered superior to machine work (weaver) in the mill?

19. State the duties and rights of capital and labor. Do the rights change from time to time? Explain.

20. Is labor a commodity in a strict economic sense?

21. When does labor have the highest efficiency?

22. Have the textile and clothing manufacturers always treated labor with justice? Explain in detail.

23. Why is unemployment very common in the textile and clothing trades?

24. State the advantages and disadvantages of trade organizations and labor organizations.

25. Explain: (a) collective bargaining, (b) boycott, (c) strike, (d) peaceful picketing and its effect on industry and society.

26. Give examples of the cost of strikes to society in general.

27. Name some of the radical labor organizations and their effectiveness in assisting labor.

28. Name some of the principal methods of settling differences between labor and capital.

29. What is meant by the expression "welfare work for employees." Does it assist both labor and capital?

30. What is meant by the expression "coöperative management of industry"?

31. (a) What is socialism? (b) State its history. (c) Has it assisted labor, society, or capital?

32. State the advantages and disadvantages of socialism.

33. (a) What is the relation between government and industry? (b) State the ideal relation.

34. (a) How does industry assist the government? (b) Enumerate the different methods of assisting the government.

35. Explain the public finance system of the country.

36. State the advantages of industrial education.

37. What is meant by taxation applied to labor and capital?

38. Explain the theory of taxation and the different methods.

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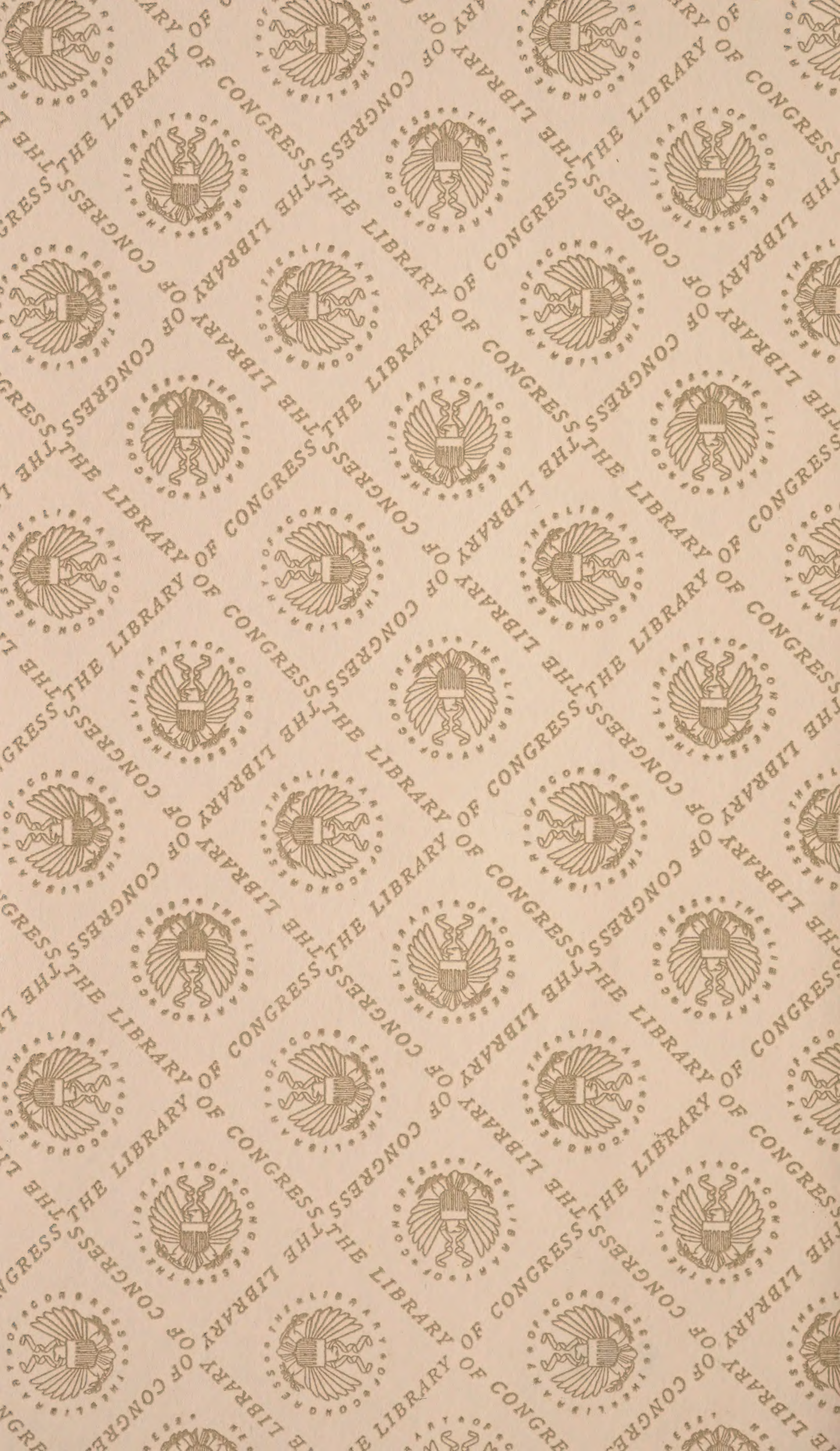
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